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ABSTRACT

In this report, the results of analyses of data from ESEA Title I Program evaluations collected in the 1969 Survey of Compensatory Education are presented. These data analyses bear on the evaluation of the operations and impact of the programs in 9236 school districts and 3219 elementary schools, involving 215,995 teachers of 5,733,976 pupils in grades two, four, and six. The data analyses are organized around four general questions about compensatory education programs in Title I elementary schools during the 1968-69 school year. (1) In what context of families, schools, and communities were compensatory education programs conducted? (2) What was the extent of the needs for compensatory education programs and how did these needs vary with such factors as pupil's ethnic-group membership, urbanism of school, etc.? (3) How efficient and sensible was the process of allocation of resources for compensatory education programs? Were Title I funds and participation in compensatory education programs allocated to the schools, teachers, and pupils with the greatest need for such programs? (4) What impact did compensatory education programs have? What were the outcomes of such programs in terms of pupils' performance on standardized achievement tests, teachers' ratings of pupils' academic personal and social growth, and teachers' general satisfaction with compensatory programs? [Appendix A is only marginally legible due to poor quality of the original document.] (Author/JM)

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DATA ANALYSIS OF THE 1968-69 SURVEY OF COMPENSATORY EDUCATION (TITLE I)

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Chapter I

Introduction

The purpose of this report is the presentation of the results of analyses of data collected in the 1969 Survey of Compensatory Education by the Bureau of Elementary and Secondary Education of the U.S. Office of Education. Far more data than were collected in the Survey are needed for any total evaluation of Title I of the Elementary and Secondary Education Act of 1965. For that reason, this report is of data analyses which may serve as one basis for policy analyses. This report is a condensation of the much longer Preliminary Report of this project which was delivered to the Office of Education on 7 May 1970. On the following pages, the highlights of the Preliminary Report are presented and summarized. At several points references will be made to the Preliminary Report which can be consulted for more detailed analyses.

Purpose of Chapter

The purpose of this chapter is to present an outline which has served two purposes: first, it was used to organize the analyses and reporting of data from the 1969 Survey of Compensatory Education; second, it served to call attention to important evaluative questions: Objectives; Strategies; Types of Evaluation; Data; Schema for Generating Evaluative Questions; and Evaluative Questions.

Objectives of Compensatory Education

The objectives of Title I of the Elementary and Secondary Education Act of 1965 at a national level have been stated only in broad, general terms. They can be found in PL89-10 and in discussions of this law as a bill in the House and Senate. It has been clear from the beginning of PL89-10 that no legislation authorizing federal aid to education would prescribe the activities and instructional objectives of local schools. Thus, the national objectives of Title I have remained nonspecific. There appear to be two general Title I objectives at the national level:

1. To provide equal educational opportunity for all social and ethnic groups.
2. To reduce deficiencies in educational attainment associated with social-class membership.

It is not within the scope of the data analyses of this project to evaluate the programs of local educational agencies with respect to their individual objectives. Presumably such evaluation was mandated in PL89-10 and has already been accomplished at the local level. The purpose of the data analyses reported here is to serve as the basis of the evaluation of compensatory education at a national level with respect to the two broad objectives listed above.

Strategies for Achieving the Objectives

The Title I program takes its character in part from its broad objectives and in part from the strategies for achieving them envisioned by Congress. These strategies are stated explicitly or implicitly in the discussion of PL89-10 in the House and Senate and in the Title I guidelines in which the law was operationalized by the U.S. Office of Education.

Five general strategies for achieving Title I objectives emerge from a study of these sources:

1. To allocate money to local educational agencies through state departments of education for the improvement and expansion of programs for socially and educationally disadvantaged pupils.

Thereby to bring about desireable changes for disadvantaged pupils in:

2. The requisites of their instruction (buildings, pupil health, etc.).

3. The personnel who teach them,
4. The materials with which they are taught,
5. The organization of their instruction.

Types of Evaluation

1. Context and operations descriptions: The description of how, where, and with whom compensatory education is pursued is relevant to evaluation in the sense that it is the description of "value-potent properties" of such programs. Such descriptions may yield statements of value when additional data and standards external to the Survey are found. For example, the racial composition of Title I schools could be compared with the racial composition of the nation's schools as documented in Equality of Educational Opportunity. Persons with a point of entry into the evaluation process which is different from ours will find evaluative meaning in facts which we can not confidently judge.

2. Instrumental evaluation: Instrumental evaluation is evaluation of the means as opposed to the ends of an educational program. The principal instrument for achieving the national objectives of Title I is the process by which Congress and the U.S. Office of Education allocate resources to local educational agencies. The instrumental evaluation of Title I will focus on the efficiency of this allocation process.

3. Consequential evaluation: Consequential evaluation is evaluation of the degree of attainment of the primary goals of the program. In the case of compensatory education, these goals are assumed to be changes in the behavior of pupils and teachers. A special effort in the data analyses to follow was directed toward evaluation of these behavioral outcomes.

Data

More than 300 variables were extracted from the Survey data for various purposes. For the purpose of this report, it is useful to classify available data into context areas, needs, allocation and outcome variables:

Contexts

1. Pupils
2. Teachers
3. Curricula
4. Schools
5. Families
6. Communities

Needs

1. Pupils performance deficits
2. Instructional program deficits (staff & material)
3. School facilities deficits

Allocation

1. Pupil participation and expenditures
2. Teacher partic. & expenditures
3. Expenditures for curriculum

Outcomes

Pupil's knowledge, skills, and motivation

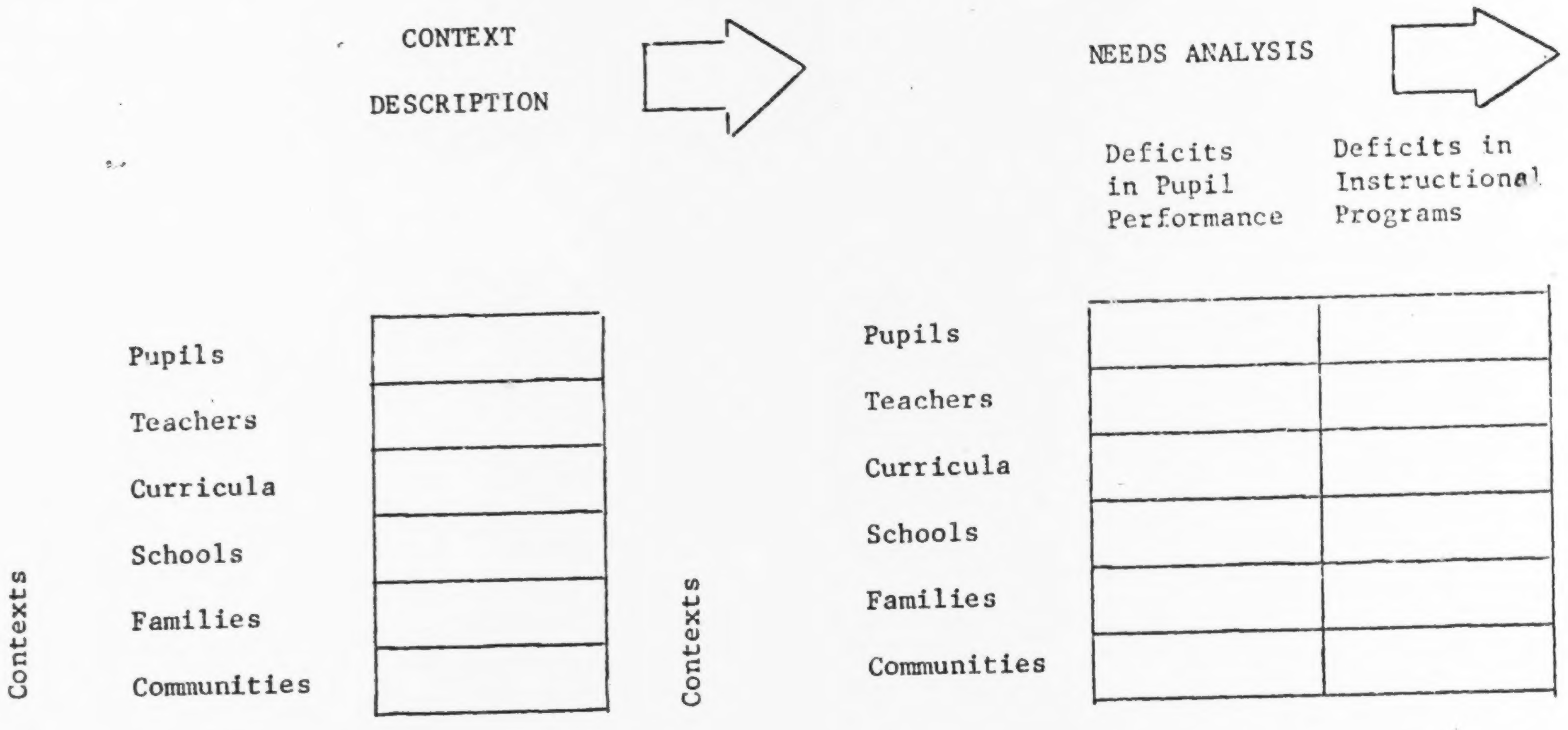
This framework was imposed upon the Survey data to organize the conduct and reporting of data analyses.

A Schema for Generating Evaluative Questions

The concepts introduced in the above sections were organized into a schema for generating the evaluative questions in Figure 1.1. This schema was intended to serve as a mnemonic device for producing evaluative questions. The following are examples of how the schema in Figure 1.1 was used:

1. Context and operations description: Data were gathered to answer the question "What is the distribution of reading achievement of the pupils in Title I schools?" A second question suggested by the schema is "What is the ethnic composition of the population of teachers in Title I schools?"

Simple descriptive answers to these questions do not as such reflect on the value of the Title I program; however, when coupled with data not available from the 1969 Survey, they may bear directly on the value of the program. For example, a count of the number of pupils


CONTEXT
DESCRIPTION
NEEDS ANALYSIS
Deficits in Pupil Performance
Deficits in Instructional Programs
Contexts
Pupils
Teachers
Curricula
Schools
Families
Communities
Contexts
Pupils
Teachers
Curricula
Schools
Families
Communities

The elements of this matrix are data descriptive of the contents of compensatory education programs.

The elements of this matrix are bivariate and multivariate relationships between a measure of educational deficit (a "need") and one or more context variables.

Figure 1.1. Schema for organizing data analyses.

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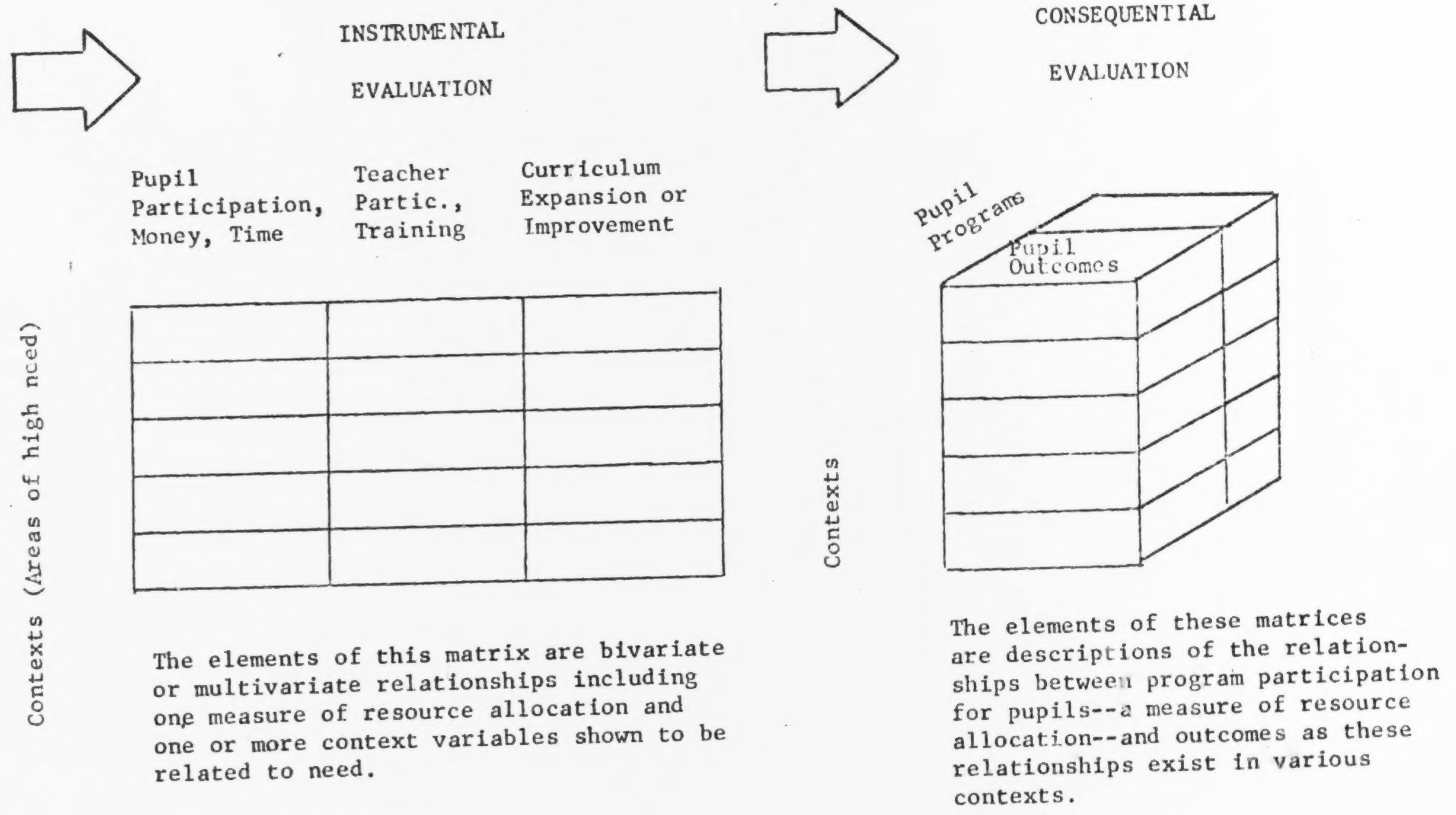
INSTRUMENTAL
EVALUATION
CONSEQUENTIAL
EVALUATION
Pupil Participation, Money, Time
Teacher Partic., Training
Curriculum Expansion or Improvement
Contexts (Areas of high need)
Contexts
Pupil Programs
Pupil Outcomes

The elements of this matrix are bivariate or multivariate relationships including one measure of resource allocation and one or more context variables shown to be related to need.

The elements of these matrices are descriptions of the relationships between program participation for pupils--a measure of resource allocation--and outcomes as these relationships exist in various contexts.

Figure 1.1. (Continued) Schema for organizing data analyses.

showing marked educational deficits may help determine whether the present magnitude of the Title I effort is sufficient for the task.

2. Analysis of needs: The analysis of needs is the study of the relationship of measures of educational deficit (e.g., percentage of class reading one year below grade level, untrained and inexperienced teachers) and context variables (urbanism of school, race of pupil). "Needs" are defined to be educational deficits existing prior to the compensatory program. Such study is intended to refine planners' conceptions of where the needs for compensatory education are greatest. Needs analyses supplement the next phase of analysis, viz., the evaluation of resource allocation. For example, if it is found that "urbanism of school" (context) is highly related to "percentage of pupils reading below grade level" (need) and that urbanism is unrelated to "per pupil expenditure" (resource allocation), then the efficiency of the resource allocation procedure may be called into question.

3. Analysis of resource allocation: The typical evaluative question in this category concerns a relationship between two or more variables, one of which is some measure of resource allocation: "How does per pupil expenditure under Title I relate to urbanism of the community?" or "How does degree of participation in Title I programs relate to ethnic composition of the school?"

4. Outcomes evaluation: The typical question assessing outcomes concerns the attribution of pupil or teacher outcomes to their participation in an instructional or training program or to some investment of resources in them. Generally these questions will also involve a context variable as a mediator of the basic relationship: "How are pupil gains in study skills related to their participation in compensatory education programs? Does this relationship differ for pupils with experienced as opposed to inexperienced teachers?"

The important link between the allocation of resources and the outcomes of compensatory programs was emphasized by Colman*:

---

* James S. Coleman, The Urban Review, Vol. 3, No. 4, pp. 6-8.

> Because of the usual difference between inputs as disbursed and inputs as received, it becomes important in evaluation to examine not only the first, but the second as well. For it may well be that the principal, or at least major, explanatory variable in the effectiveness or ineffectiveness of a given program is the loss of input between its disbursement by authorities and its reception by the child it is intended to effect [sic].

Evaluative Questions

The schema in Figure 1.1 was used to identify the following evaluative questions for which answers were sought.

Context and operations description:

1. What are the characteristics (race, educational deficit, etc.) of all pupils enrolled in Title I schools?
2. What are the characteristics (home language, size, economic level, etc.) of the families of the pupils enrolled in Title I schools?
3. What are the characteristics (sex, ethnic group, experience, training) of teachers in Title I schools?
4. What types of curriculum are taught in Title I schools?
5. What are the characteristics (size, organization, ethnic composition, etc.) of the Title I schools?
6. What are the characteristics (size, wealth, etc.) of Title I districts?

The evaluative relevance of these context and operations description questions is to the assessment of the need for national compensatory education programs. The answers to these questions should bear on more specific questions such as the following:

a. Is a program of allocating approximately $1,000,000,000 per year adequate to meet the need?
b. How severe is social disadvantage in Title I schools?
c. How severe is the deficit in educational attainment in Title I schools?

Definitive answers to some of these questions will not be possible because a standard for judging the goodness or badness of a finding is not now available. For example, does the fact--if it is a fact--that 22 percent of the teachers in Title I schools have less than three years experience mean that Title I schools have less experienced teachers than non-Title I schools? Lacking data from non-Title I schools, we can only report these data and call attention to the need for further data to give the findings more evaluative significance.

Needs analysis:

7. Which context variables can be used to identify pupils, schools and districts having the greatest need for compensatory education programs?

To answer this question, variables descriptive of the educational deficit of a pupil, school or district (e.g., pupil achievement, poverty of pupil's family, poverty of educational facilities, poverty of instructional programs and special services) will be crosstabulated with context variables (e.g., ethnic composition of the school, urbanism of the school, size of district). Thus, context variables which can be used to identify pupils, school and districts with marked need for compensatory programs will be determined. The answers to these questions have evaluative significance in determining whether the Title I policy of allocating resources is aimed at those in greatest need of compensatory education. For example, if educational deficit is greatest in the rural schools and least in the suburbs, a policy which allocated money equally to rural and suburban pupils would be open to question.

Analysis of resources allocation: Questions in this category concern the efficiency with which compensatory education resources (as measured in terms of dollars, time and participation) are reaching needy pupils, teachers, schools and states. These questions will be answered by means of crosstabulations in which a variable descriptive of resource allocation is related to one or more context variables.

Specific evaluative questions under this heading are as follows:

8. How does the type of program (disadvantaged, regular or enrichment) a pupil participates in relate to his race, previous academic performance, family characteristics, etc.?
9. How does the amount of time a pupil spends in compensatory

programs relate to other variables descriptive of him?

10. How does district per-pupil expenditure for compensatory programs relate to other characteristics of the district?
11. How does a teacher's assignment as to a regular, a disadvantaged or an enrichment class relate to characteristics of the teacher (e.g., age, sex, experience, recent training)?
12. How do teachers' characteristics relate to the characteristics of the pupils in their classes?
13. How does a teacher's participation in an inservice training program relate to characteristics of the teacher?
14. How does the policy of concentration of Title I services in a district relate to other characteristics of the district?
15. How does a district's percentage allocation of funds for inservice training relate to other characteristics of the district?
16. In what ways do programs for the disadvantaged differ from regular and enrichment programs?
17. How do characteristics of school districts relate to the involvement of lay community groups in Title I activities?

Analysis of outcomes:

18. Is pupils' participation in compensatory programs related to increases in pupils' knowledge, skills and motivations?

The Survey

The survey sample and the population to which the survey data are generalized are described in detail in Appendix B to this report. The survey questionnaires were distributed to school districts, principals and teachers in Title I elementary schools. Teachers supplied data on pupils in grades two, four and six as well as on themselves. The population to which the sample data generalize comprises 5,734,000 pupils in grades two, four and six and their 216,000 teachers in some 33,000 Title I elementary schools in over 9,200 school districts across the nation.

Chapter II

The Context of Title I: Pupils, Parents, Communities, and Schools

During fiscal year 1968-69, Title I programs were conducted in school districts in every state in the nation; nearly 12,000,000 elementary school pupils were enrolled in grades 1 through 6 in Title I schools. In this chapter, data from the 1969 Survey of Compensatory Education are used to describe the pupils, teachers, curricula, schools and communities which constitute the context in which Title I 1968-69 took place.

The data presented here are intended to describe the context of Title I schools apart from their involvement in compensatory education. The extent, nature, and outcomes of compensatory education programs will be dealt with in Chapters III-V. In this chapter, we describe the context in which compensatory programs were conducted in 1968-69. Such descriptions reveal something of the personnel who administer such programs, and of the pupils whose increased welfare is the goal of Title I of the Elementary and Secondary Education Act of 1965. The descriptions also reveal something of the magnitude of educational and economic deficit in Title I schools. Over 90 percent of the nations schools are eligible for compensatory education funds under this act. Thus, the population to which these results are generalized covers a broad spectrum of public elementary schools, although, of course, the 10 percent of all public schools not included may be expected to differ in important ways from the schools studied in the Survey.

Pupils in Title I Schools

Location and Ethnic-Group Membership

The pupils in Title I schools live and go to school in areas

Table 2.1

Biographical information on pupils in grades two, four and six in Title I schools

Educational level of head of household			
Level	Number and Percent	Level	Number and Percent
Little or no schooling	369,063 6.44	Completed college	347,358 6.06
Grade school	758,483 13.23	Graduate school	179,881 3.14
Some high school	1,058,750 18.46	Don't know	468,317 8.17
Completed high school	1,594,629 27.81	No Response	446,949 7.79
Post high school	510,540 8.90	Totals	5,733,970

(Continued)

Table 2.1 (Continued)

Poverty level			
Income/family member	Number and Percent	Income/family member	Number and Percent
$200-499	511,963 8.93	$2,000-2,299	618,806 10.79
$500-799	929,071 16.20	$2,300-2,599	64,977 1.13
$800-1,099	836,755 14.59	$2,600-2,899	200,307 3.49
$1,100-1,399	712,900 12.43	No Response	541,160 9.44
$1,400-1,699	765,386 13.35	Totals	5,733,975
$1,700-1,999	552,646 9.64		

(Continued)

Table 2.1 (Continued)

Occupational level of head of household			
Level	Number and Percent	Level	Number and Percent
Unskilled	1,287,793 22.46	Professional	277,953 4.85
Semi-skilled	1,249,401 21.79	Unclassifiable	1,435,515 25.04
Skilled	827,975 14.44	No Response	204,730 3.57
Owner-manager	373,247 6.51	Totals	5,733,976
Technical	77,362 1.35		

(Continued)

Table 2.1 (Continued)

Home language other than English				
	No	Yes	No Response	Totals
Number and Percent	5,169,653 90.16	358,236 6.25	206,085 3.59	5,733,974

Pre-kindergarten and kindergarten experience								
	No		Yes		No Response		Totals	
	Kind	Pre-kind	Kind	Pre-kind	Kind	Pre-kind	Kind	Pre-kind
No. %	1,888,978 32.94	3,084,537 53.79	3,003,132 52.38	602,540 10.51	841,867 14.68	2,046,898 35.70	5,733,977	5,733,977

Urbanism of school					
	Rural	Suburban	Urban	No Response	Totals
No. %	2,852,321 49.75	1,235,038 21.54	1,287,635 22.46	358,976 6.26	5,733,976

(Continued)

Table 2.1 (Continued)

Ethnic group							
	American Indian	Negro	Oriental	Spanish	White	No Response	Totals
Number and Percent	23,354 0.41	1,299,115 22.67	23,256 0.41	323,822 5.65	3,999,599 69.75	64,827 1.13	5,733,976

Families on welfare			
	No	Yes	Totals
Number and Percent	5,183,641 90.40	550,337 9.60	5,733,978

ranging from completely rural to completely urban. Definitions of the terms "rural," "suburban" and "urban" as used in this report are as follows:

1. Rural: The school is located in a rural area or one which serves families living in a rural area.
2. Suburban: The school is located in a suburb or a small city (population less than 50,000) and serves families living in residential or residential-commercial areas.
3. Urban: The school is located in a city (population at least 50,000) and serves families living in residential or residential-commercial areas.

Of all pupils in schools receiving Title I funds, almost half, 49.75 percent, go to rural schools, 21.54 percent go to suburban schools and 22.46 percent attend urban schools. Whether or not this represents a disproportionate representation of any of the three classes of urbanism cannot be determined from the survey data since only Title I schools were included. It may be noted, however, that these data are consistent with the 1968 Survey of Compensatory Education results. The crucial issue, of course, is not whether disproportionality exists, but whether Title I funds are being allocated on a basis consistent with the intent of the law. This judgment may be made more adequately on the basis of the information presented in those chapters devoted to needs and the allocation of Title I resources.

Data on ethnic-group membership of pupils in Title I schools, as shown in Table 2.1, indicate that 69.75 percent are white, 22.67 percent are Negro, 5.65 percent are Spanish-surnamed, 0.41 percent are American Indian and 0.41 percent are Oriental. Regarding American Indians, it should be noted that schools operated by the Bureau of Indian Affairs are not included in this survey. It is in these schools, not included in the Survey, that many American Indian pupils are found.

The concentration of minority group members in urban areas is well-known and is further documented by this Survey (Table 2.2). Although only 22.46 percent of all Title I pupils attended schools that are classified as urban, nearly half (49.64 percent) of all Negroes attended

Table 2.2

Pupils classified by ethnic-group membership and by urbanism of school with percents by row

Ethnic group of pupil	Urbanism of school				
	Generally rural	Suburban	Urban	No Response	Totals
American Indian	12,460 53.34	5,271 22.57	4,952 21.21	672 2.88	23,354
Negro	437,944 33.71	127,241 9.80	644,821 49.64	89,107 6.86	1,299,115
Oriental	8,088 34.78	5,312 22.85	9,124 39.24	732 3.15	23,256
Spanish-surnamed	111,015 34.29	51,877 16.02	147,109 47.43	13,822 4.27	323,822
White	2,248,534 56.21	1,032,707 25.82	467,027 11.68	251,331 6.28	3,999,599
No Response	34,287 52.90	12,630 19.48	14,601 22.52	3,311 5.11	64,827
Totals	2,852,326 49.75	1,235,038 21.54	1,287,635 22.46	358,976 6.26	5,733,976

schools of this type, as do 45.43 percent of all Spanish-surnamed children. In contrast to this, only 11.68 percent of white pupils attended urban schools. The most striking feature in Table 2.2 is the relatively small representation of Negro and Spanish-surnamed pupils in suburban schools.

Ethnic-group Concentration in Classrooms of Title I Schools

A study of the concentration of pupils of different ethnic groups reveals that both Negroes and Spanish-surnamed pupils tend to be concentrated in classes with a high percentage of pupils of the same ethnic group. These data are presented graphically in Figure 2.1 through 2.4.

Most Negroes in Title I elementary schools were in classes that were greater than 90 percent Negro. More than 1,830,000 Negro children in grades one through six, that is 71 percent of all Negroes in these grades, were in classes 91 to 100 percent Negro. Very few Negro children, 6 percent, were in classes that were only 1 to 10 percent Negro; even fewer Negro pupils, 5 percent, were in classes that were one-half to three-quarters Negro. At the same time that Negroes were attending classes with heavy concentrations of Negroes, 59 percent of the white pupils were in classes with no Negroes. Spanish-surnamed pupils tended to be enrolled in classes with a high concentration of Negroes at a greater rate than whites. The 0.13 percent of the Negroes who were reported to be in classes with no Negroes in them is attributable to teacher error in reporting.

The statistics which represent the number of children with Spanish surnames who were in classes with a large percentage of other Spanish-surnamed pupils allow one to see that this group also experienced some ethnic grouping in Title I elementary school classrooms. Twenty-two percent of the Spanish-surnamed pupils were in classes that were 91 to 100 percent Spanish surnamed. Ten percent of the Spanish-surnamed pupils were in classes that were 76 to 90 percent Spanish-surnamed; 22 percent were in classes 26 to 50 percent Spanish-surnamed.

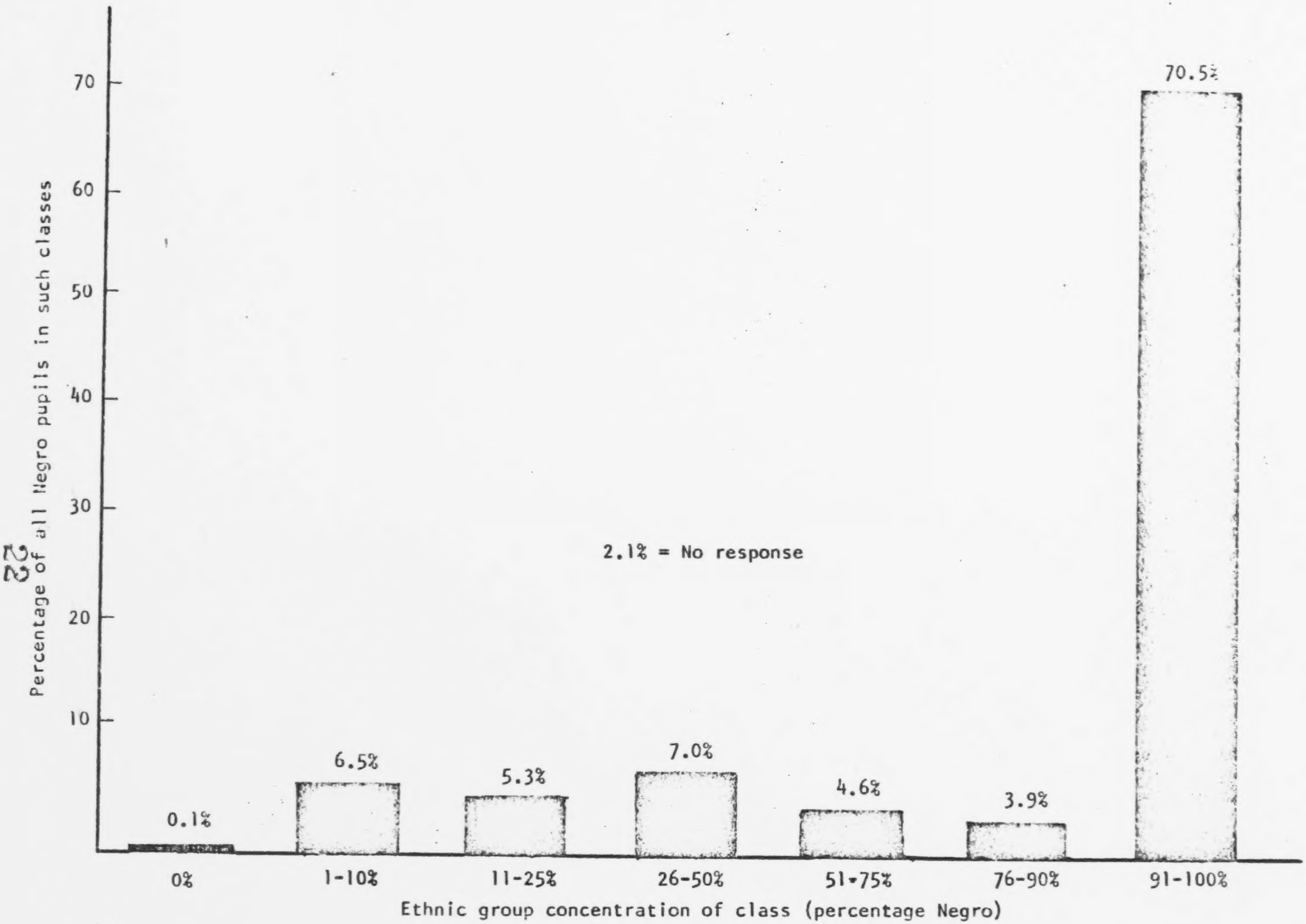

Figure 2.1. Percentages of 1,299,115 Negro pupils in classes of differing Negro concentration.

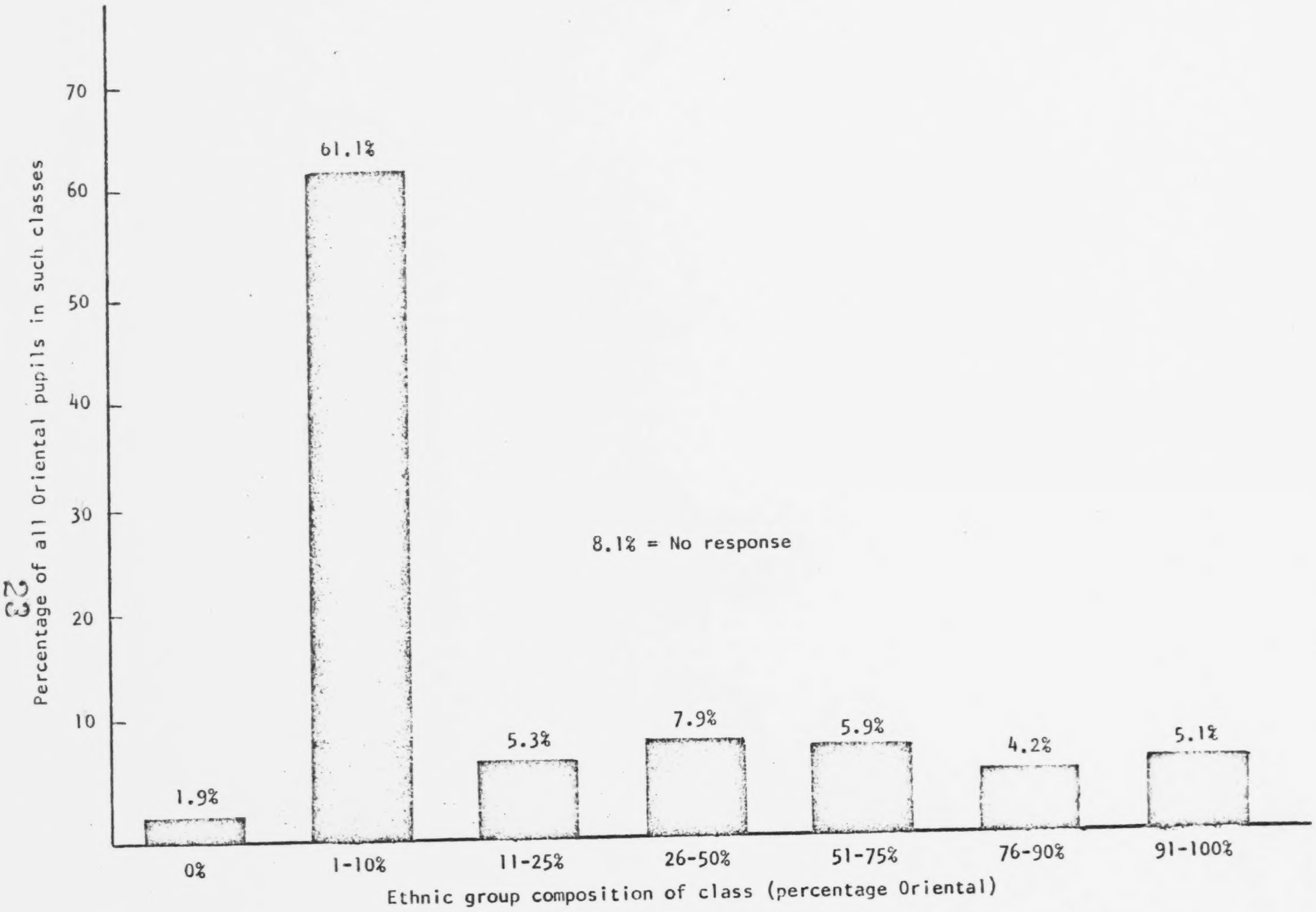

Figure 2.2. Percentages of 23,257 Oriental pupils in classes of differing Oriental concentration.

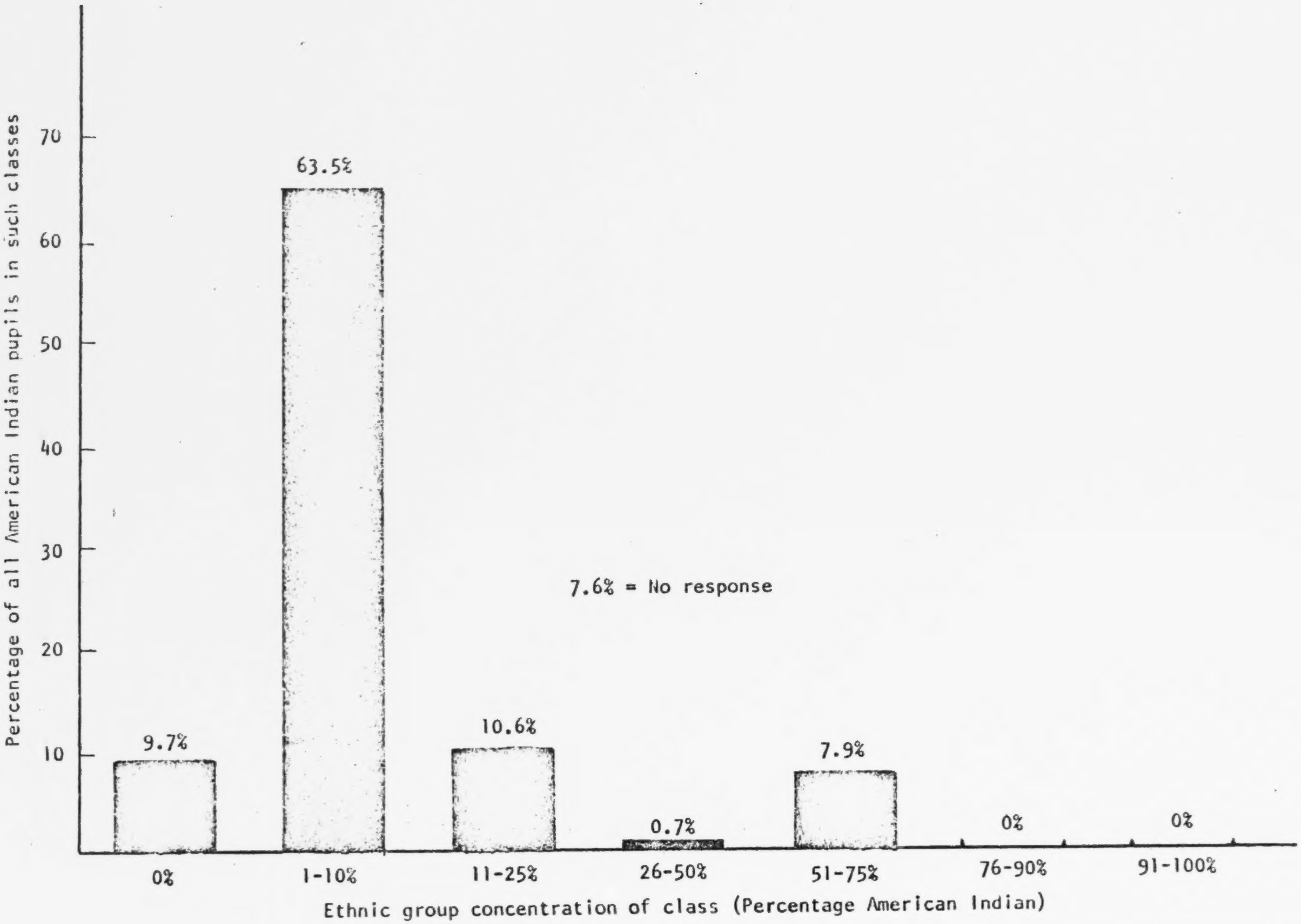

Figure 2.3. Percentages of 23,355 American Indian pupils in classes of differing American Indian concentration.

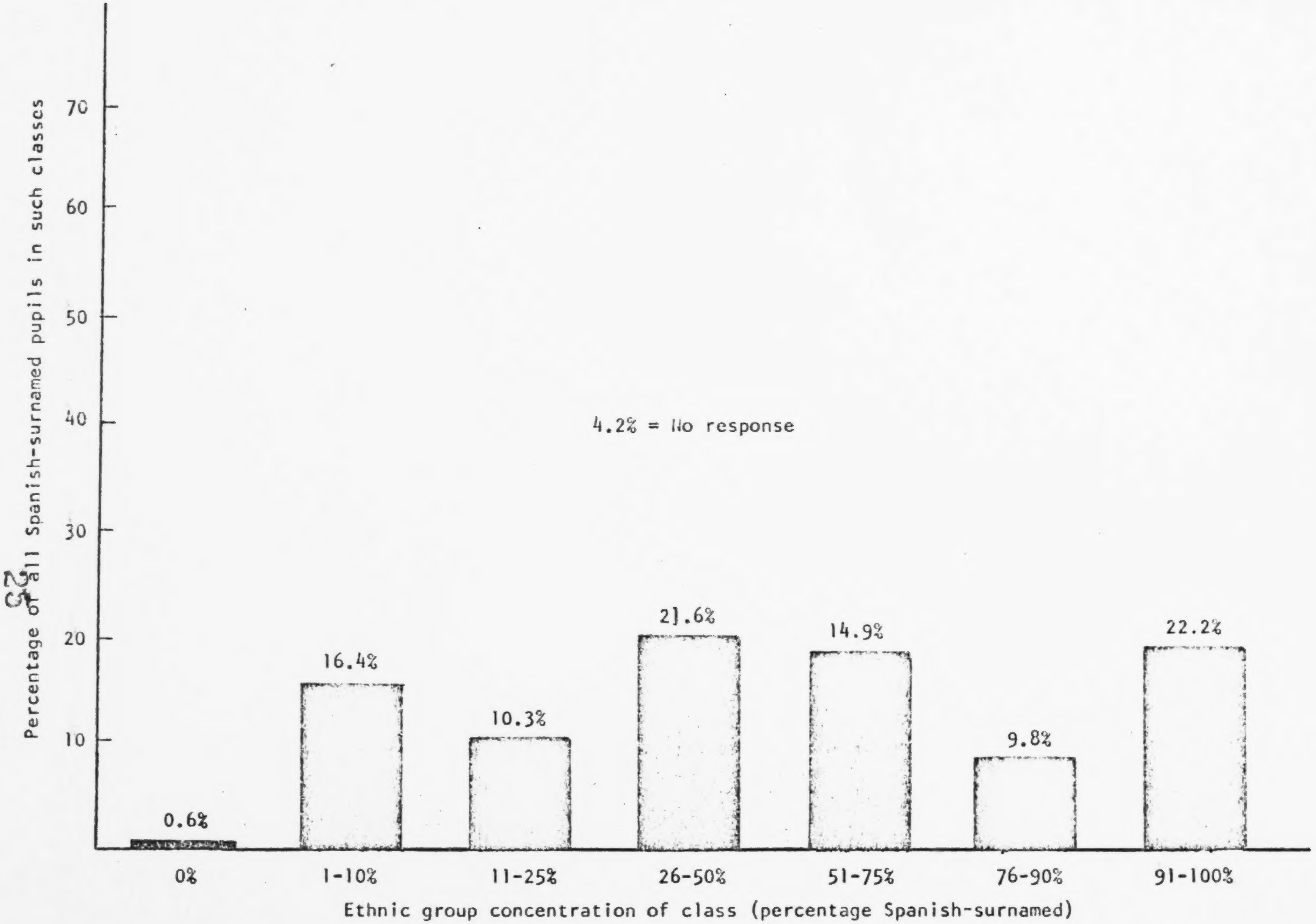

Figure 2.4. Percentages of 323,824 Spanish-surnamed pupils in classes of differing Spanish-surnamed concentration.

The Families of Title I Pupils

Teachers were asked to provide their best estimate of the family income for each of the pupils surveyed. This estimate was divided by the number of family members to arrive at a figure indicating income per family member. In Table 2.1, it can be seen that nearly 1.5 million children (25.13 percent) in grades two, four and six of Title I schools were from families where the income was less than $800 per family member. Another 1.5 million (27.01 percent) second, fourth and sixth graders were from families where the income per family member is between $800 and $1,000 per year.

Another important economic indicator is the percentage of pupils from families on welfare, i.e., receiving Aid to Families with Dependent Children (AFDC). Table 2.1 shows that 9.60 percent of Title I children were from such families. Further analysis indicated that the welfare recipients tend to be concentrated in urban areas; 42.5 percent of the recipients were in urban schools which account for only 22.46 percent of all Title I children. The data show a consistent poverty trend from urban to rural to suburban areas with the urban areas showing the greatest incidence of poverty and the suburban areas the least.

Data on the educational and occupational level of the head of the household are also given in Table 2.1. Nearly 40 percent of the pupils were from families in which the head of the household had less than a high school education. By contrast, less than 10 percent had completed college. Similar information on occupational level of the head of the household reveals that 43 percent were working at un-skilled or semi-skilled jobs and approximately 13 percent were professional or technical workers. Obviously there is a considerable amount of overlapping of information in the family characteristic data: for example, occupational level and income level are highly related. All of the family characteristic data are strongly related to the degree of urbanism of the school. Lower levels of income, education, and occupation were more prevalent in rural and urban school families; higher levels were more prevalent in suburban schools.

Teachers reported that some language other than English was the primary language of the home for 6.10 percent of the pupils. It can be estimated that approximately 720,000 pupils in grades two, four and six of Title I schools come from homes in which English is not the primary language. Spanish is most often the primary language for these pupils.

Recently there has been increasing emphasis on the importance of early childhood education to the total school experience. The data in Table 2.1 reveal that Kindergarten experience is far from universal in Title I schools. Only slightly more than half (52 percent) of the pupils had Kindergarten experience and less than 11 percent had pre-Kindergarten school experience. The significance of these results is somewhat attenuated by the high "no response" rate, particularly for the pre-Kindergarten category. Nevertheless, the indication that at least 3,780,000 children in grades one through six had not gone to Kindergarten may be an important contextual variable in the over-all view of Title I schools. Further analyses revealed that the absence of Kindergarten and pre-Kindergarten experience was much more prevalent in rural schools than in urban or suburban schools.

Teachers and Classes in Title I Schools

Teaching Experience

Among the teacher characteristics judged to be beneficial to students are experience, stability and special training for their assignment. The marginal totals of Table 2.3 show that over half of all teachers in Title I elementary schools had ten or more years of experience at the time of the Survey. Approximately 30 percent had from three to ten years of experience and the remainder (about 20 percent) had less than three years of experience.

Concentration of Welfare Recipients

Marginal totals in Table 2.3 on the percentage of the class on

Table 2.3

Teachers classified by percent of class members whose families are on welfare and teachers years of experience, with percents by rows

Percent of class on welfare	Teachers' years of teaching experience							
	1 year or less	More than 1, less than 3 yrs.	More than 3, less than 6 yrs.	More than 6, less than 10 yrs.	More than 10, less than 20 yrs.	20 yrs. or more	No Response	Totals
0-9%	11,855 8.78	11,330 8.39	20,827 15.43	18,454 13.67	34,417 25.49	37,651 27.89	464 0.34	134,998
10-49%	6,537 9.67	5,352 7.92	11,751 17.38	9,712 14.37	16,011 23.69	17,983 26.60	251 0.37	67,595
50-100%	1,173 13.52	1,314 15.15	1,686 19.44	1,032 11.90	1,737 20.03	1,692 19.51	42 0.48	8,674
No Response	530 11.21	462 9.78	748 15.83	520 11.00	1,161 24.57	1,159 24.52	146 3.09	4,726
Totals	20,094 9.30	18,458 8.55	35,013 16.21	29,717 13.76	53,326 24.69	58,485 27.08	903 0.42	215,995

welfare show that nearly two-thirds (62.5 percent) of all classes in Title I elementary schools had less than 10 percent of their pupils from families on welfare. Only 4 percent of the classes had over one-half of their class members on welfare. The information in the body of Table 2.3 shows a relationship between a teacher's experience and the percent of pupils in his class who receive AFDC. A pupil in a class with a high concentration of welfare recipients is more likely to have an inexperienced teacher than a pupil in a class with no welfare recipients. This appears contrary to the presumptively desirable condition of having more experienced teachers with poorer students.

Previous Training for Teaching the Disadvantaged

Perhaps a better criterion (i.e., better than years of teaching experience) for assigning teachers to classes with high concentration of pupils from welfare families is the extensiveness of the teachers' special training for teaching the disadvantaged. (This characteristic of teachers is reported here as opposed to in a later chapter on Title I resources allocation because the teacher training referred to took place before the 1968-69 school year; thus it does not represent the results of any funds allocated during 1968-69.) A special training program is defined as a college course or seminar taken either before or after entering teaching, with or without college credit. Participation in programs such as those for teachers' aides or the Teacher Corp was also included. The common characteristic of all special programs was their emphasis on the education of the disadvantaged.

Marginal totals and percentages in Table 2.4 indicate that 29 percent of all teachers participated in one program and 17 percent participated in two or more programs. About 54 percent of the teachers did not report having participated in any training program. The relationship between participation in special programs and percentage of class on welfare shows a definite trend toward assigning the more extensively trained teachers to the classes with higher concentrations of pupils on welfare. Thus, while disadvantaged students may not, in general, have been getting the most experienced teachers, they did tend to get the teachers with special training for teaching the disadvantaged.

Table 2.4

Teachers classified by percent of class members whose families are on welfare and extensiveness of training for teaching academically disadvantaged with percents by row

Percent of class members-welfare	Extensiveness of training for teaching academically disadvantaged						
	One Program	Two Programs	Three Programs	Four Programs	Five or more Programs	No Response	Totals
0-9%	38,152 28.26	11,186 8.29	3,755 2.78	1,262 0.94	318 0.23	80,325 59.50	134,998
10-49%	20,376 30.14	10,121 14.97	3,791 5.61	1,202 1.78	322 0.48	31,783 47.02	67,595
50-100%	3,154 36.37	1,756 20.25	896 10.33	277 3.19	122 1.29	2,479 28.58	8,674
No Response	1,231 26.05	638 13.50	238 5.03	134 2.84	7 0.15	2,478 52.44	4,726
Totals	62,914 29.13	23,701 10.97	8,679 4.02	2,876 1.33	760 0.35	117,066 54.20	215,995

Stability of Teaching

Stability of teachers may be considered as a characteristic of the classes rather than a characteristic of the responding teachers who were asked to indicate the number of teachers, in addition to themselves, who had been in charge of their classes during the 1968-69 school year. Stability of teaching is a measure of the turnover of teachers assigned to a particular class. Teachers leave their classes during any given year for a number of reasons; among them might be dissatisfaction or inability to cope with an assignment. Teacher turnover appears not to have been extensive among the teachers responding in the Survey. Nearly 90 percent of the teachers indicated that no teacher other than themselves had taught the class for at least two consecutive weeks during the school year. The information presented in Table 2.5 indicates that there is a relationship between teacher turnover and the percentage of the class on welfare. The higher the percentage on welfare, the higher the turnover rate tends to be. Obviously, no direct cause and effect relationship can be inferred from these data. Classes with high percentages of children on welfare may tend to be in old buildings, have more discipline problems, be in districts paying low salaries, etc., which may be more direct reasons for high turnover. Whatever the reasons, the effect was less stability in classes with high concentrations of disadvantaged children, the classes in which high stability is probably most important. In any event, teacher instability appears not to have been a prevalent problem.

Ethnic-group Membership of Teachers

The ethnic-group membership of teachers in Title I elementary schools is shown in Table 2.6. About 81 percent of the teachers were white and 16.5 percent were Negro; the other ethnic groups each accounted for less than 1 percent. It should be noted again, however, that the vast majority of American Indian teachers are found in schools operated by the Bureau of Indian Affairs and are not included in this Survey. More than 84 percent of the teachers in rural and suburban schools were white. This percentage drops to approximately 63 percent for urban schools. It is in the urban category that the percentage

Table 2.5

Teachers classified by percent of class members whose families are on welfare and stability of teaching with percents by rows

Percent of class welfare	Number of teachers who have held the assignment for at least two consecutive weeks, in addition to the teacher responding						
	None	1	2	3	More than 3	No Response	Totals
0-9%	121,511 90.01	10,042 7.44	2,231 1.65	413 0.31	401 0.30	401 0.30	134,998
10-49%	59,245 87.62	6,290 9.30	1,160 1.72	365 0.54	283 0.42	252 0.37	67,595
50-100%	7,311 84.29	929 10.71	259 2.99	102 1.18	62 0.71	10 0.12	8,674
No Response	3,678 77.83	521 11.02	135 2.86	22 0.47	62 1.30	308 6.52	4,726
Totals	191,746 88.77	17,781 8.23	3,785 1.75	904 0.42	809 0.37	971 0.45	215,995

Table 2.6

Teachers classified by ethnic-group membership and urbanism of school with percents by rows

Ethnic-group of teacher	Urbanism of school				
	Generally rural	Suburban	Urban	No Response	Totals
American Indian	18 14.75	31 25.41	64 52.46	8 6.56	122
Negro	13,203 37.09	3,258 9.15	17,442 49.00	1,693 4.76	35,596
Oriental	375 33.45	222 19.80	515 45.94	8 0.07	1,121
Spanish-surnamed	698 43.33	318 19.12	562 34.89	33 2.05	1,611
White	93,054 53.15	41,301 23.59	31,462 17.97	9,255 5.29	175,070
No Response	1,183 47.80	262 10.59	735 29.70	295 11.92	2,475
Totals	108,531 50.25	45,392 21.02	50,779 23.51	11,292 5.23	215,995

of Negro teachers was highest. About 50 percent of Negro Title I teachers were in urban schools, and 37 percent were in rural schools. Negro teachers were mostly poorly represented in suburban schools where they made up only 7 percent of the teaching staff of Title I elementary schools. The pattern of location of teachers of various ethnic groups in schools of differing degrees of urbanism is quite similar to the corresponding pattern for pupils, as can be seen by comparing Tables 2.2 and 2.6.

Teachers' Starting Salaries

The incidence of various starting salaries in Title I elementary schools for teachers with a B.A. is recorded in Table 2.7. Compared to the national median and mean starting salaries of approximately $6,100 and $6,000*, respectively, Title I teachers' starting salaries were below the national average. During the 1968-69 school year 50 percent of all school districts in the nation reported starting salaries below $6,100; it is estimated that more than 64 percent of the school districts with Title I programs had teachers' starting salaries below $6,100.

Starting salary is somewhat related to the size of the school district, as can be seen in Table 2.7. Fifty-five percent of the districts in the smallest size category reported starting salaries below $6,000 in 1968-69; in the largest size category, 40 percent of the districts reported a starting salary below $6,000.

Characteristics of Title I Elementary Schools

Ethnic-group Concentration

Some indication of the concentration of minority group members within Title I elementary schools is given by the data from this Survey.

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*Data obtained from "Salary Schedules for Teachers." Research Report 1969-R13, National Education Association.

Table 2.7

Districts classified by starting salary for teacher with bachelor's degree and size of district with percents by column

Starting salary for teacher with BA	District size				
	Above 40,000 enrollment	40,000-9,000	8,999-3,000	2,999-300	Totals
$4,000-4,999	0 0	16 2.42	16 0.83	258 3.92	289 3.13
$5,000-5,999	34 37.36	255 38.71	760 39.67	3,349 50.98	4,398 47.62
$6,000-6,999	47 51.65	366 55.65	1,061 55.37	2,898 44.12	4,373 47.35
$7,000-7,999	10 10.99	0 0	32 1.65	0 0	42 0.45
$8,000-8,999	0 0	0 0	16 .83	0 0	16 0.17
No Response	0 0	21 3.23	32 1.65	64 .98	117 1.27

Figures 2.5 through 2.8 show the percentages of Title I schools with given concentrations of minority group members. Perhaps the most striking comparison is between the existing condition and the presumably ideal situation. If Negro pupils were proportionately represented in all Title I schools, 100 percent of the schools would be composed of approximately 22 percent Negro pupils. Actually, only 26 percent of the schools come near this proportion. Most schools had a small percentage (1 to 10 percent) or no Negro pupils, while another 13 percent of the schools had concentrations of Negro pupils ranging from 91 to 100 percent. Whatever the causes, and they are many, the dispersion of Negro pupils throughout the schools of the country is far from an accomplished fact.

Pupil Attendance and Mobility Rates

Mobility* and attendance rates of the pupil population are given in Tables 2.8 and 2.9. Mobility of the pupil population shows similar though more pronounced trends. Most schools (62 percent) had a mobility rate of less than 20 percent. Rural schools were more stable than this; urban schools showed a much higher rate of student turnover. Over 12 percent of the urban schools had a mobility rate above 40 percent. The high rate of student mobility underlines the difficulty of providing continuity in educational programs for a large proportion of students.

The data indicate that more than 83 percent of all Title I elementary schools had attendance rates of 90 to 100 percent. Attendance rates tended to be poorer than average for urban schools and slightly higher than average for rural schools.

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*"Student-body mobility rate" was defined as the sum of the number of additions to and withdrawals from the school during the academic year divided by the average daily membership of the school. Hence, this measure of mobility could exceed 100 percent, though it seldom did.

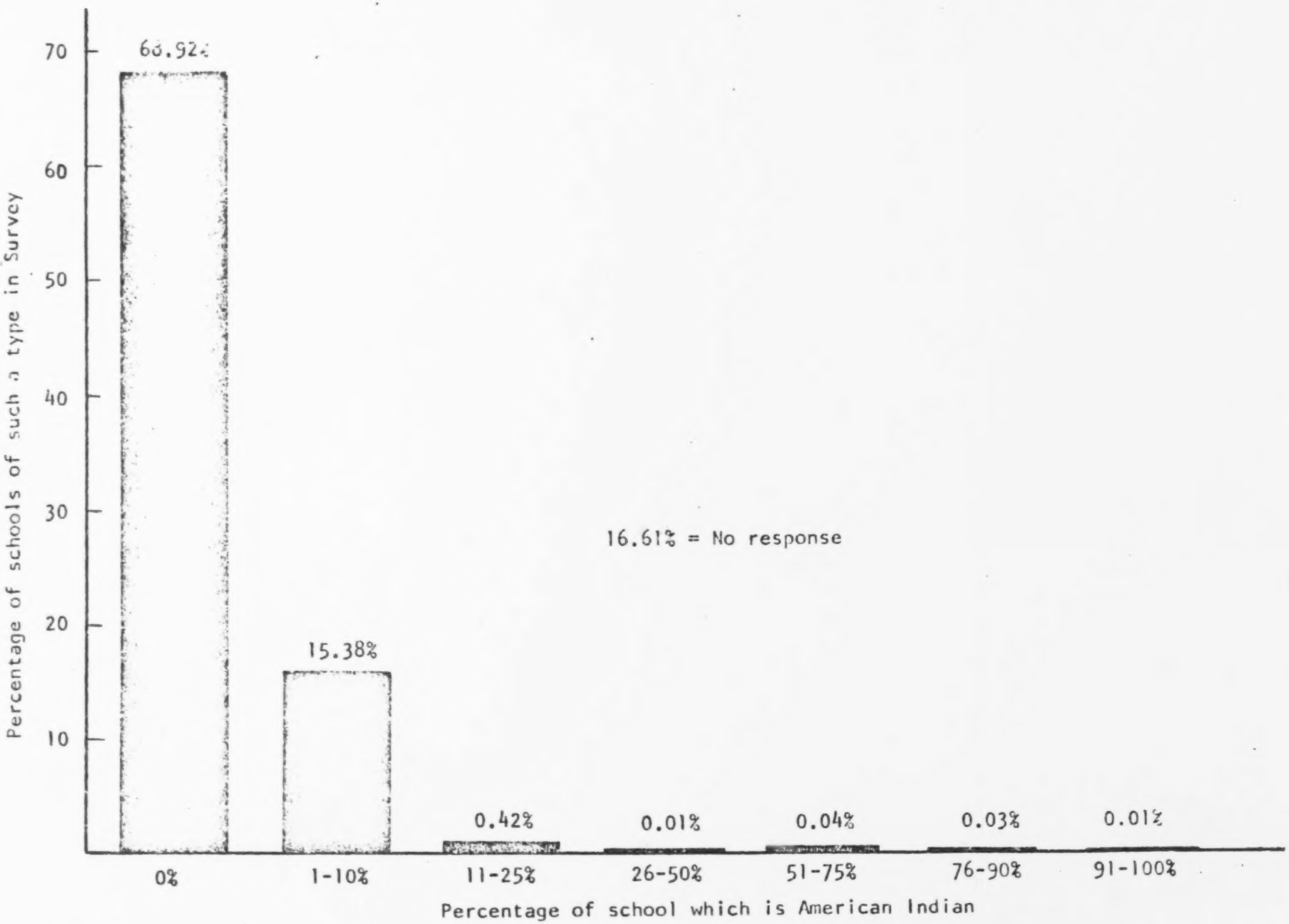

Figure 2.5. Ethnic group concentration of schools (American Indian)

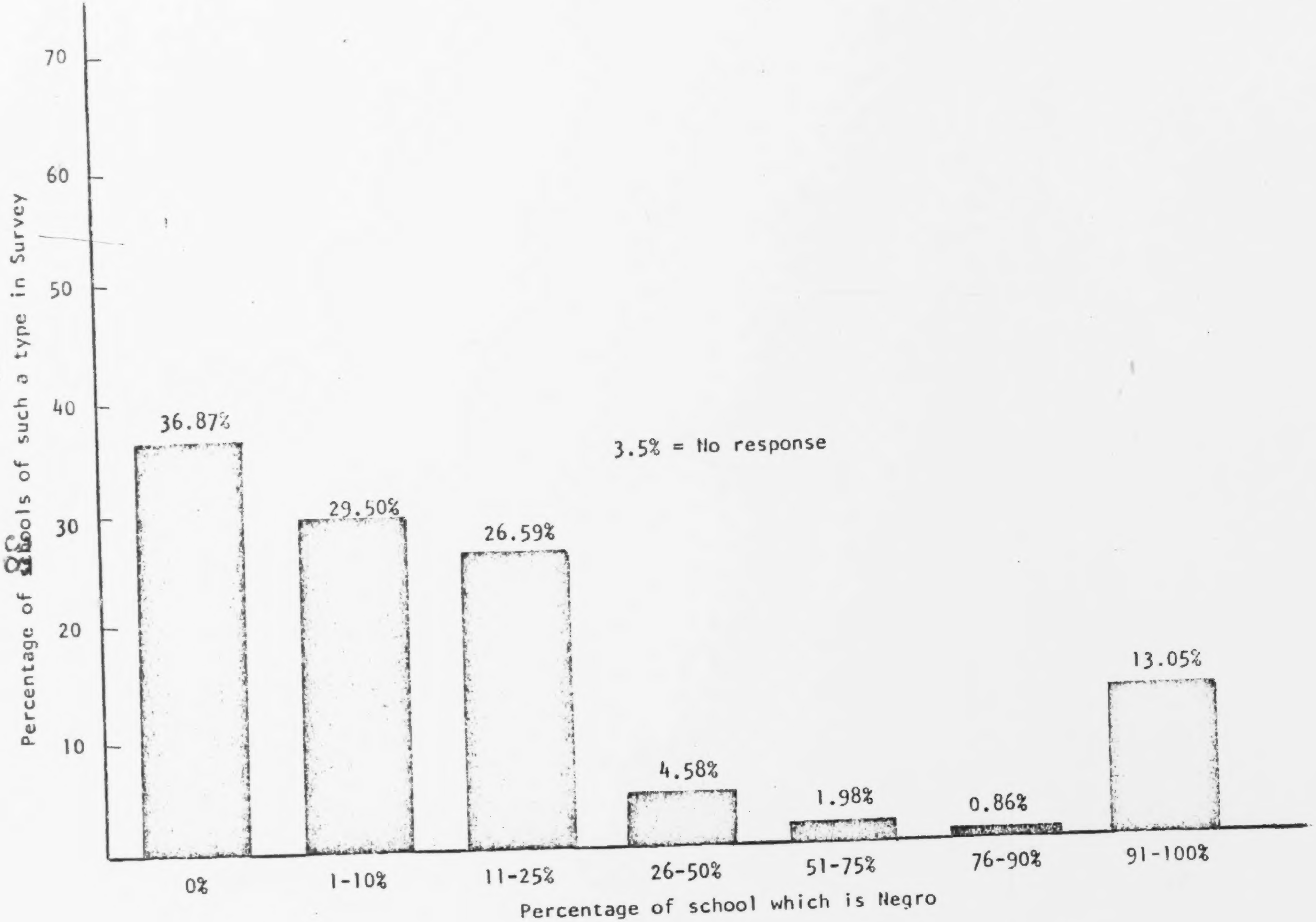

Figure 2.6. Ethnic group concentration of schools (Negro)

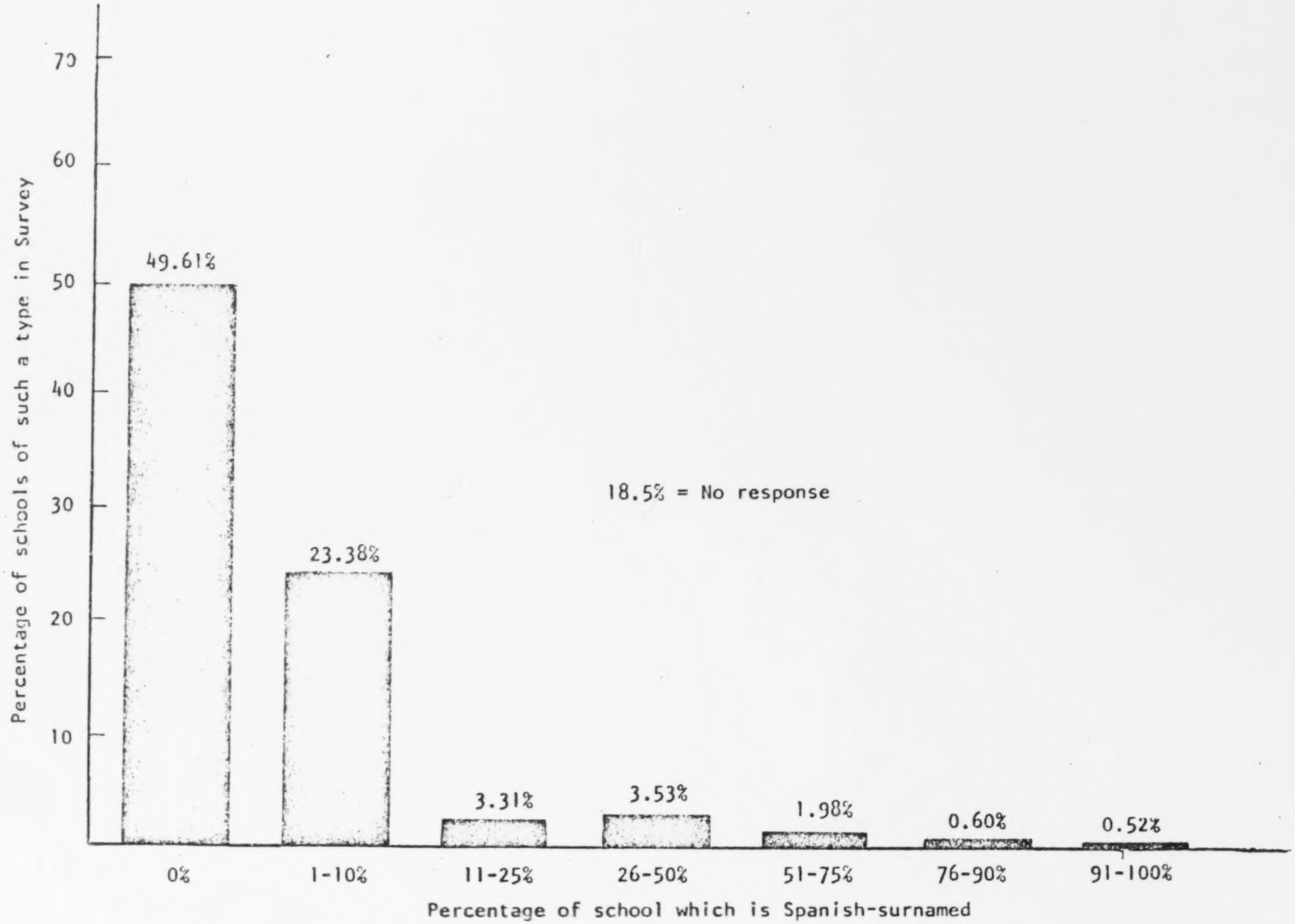

Figure 2.7. Ethnic group concentration of schools (Spanish-surnamed)

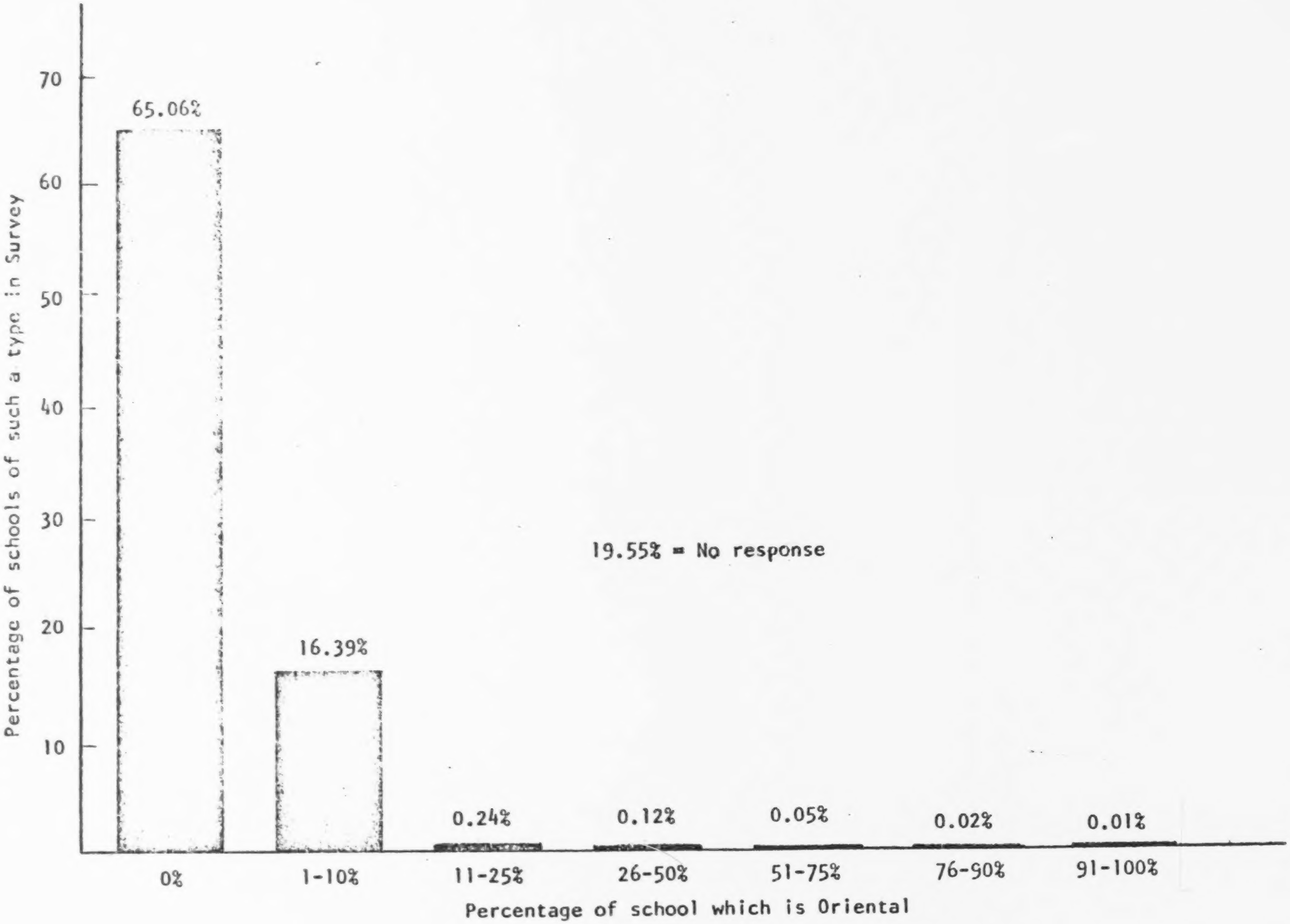

Figure 2.8. Ethnic group concentration of schools (Oriental)

Table 2.8

Schools classified by instability of pupil population and by urbanism of school with present distribution by column

Instability of pupil population	Urbanism of school				
	Generally rural	Suburban	Urban	No Response	Totals
0-9%	7,565 38.07	1,448 23.61	580 8.65	343 34.06	9,936 30.37
10-19%	7,033 35.39	1,942 31.66	1,288 19.20	240 23.83	10,505 32.11
20-29%	2,165 10.89	574 9.36	1,245 18.56	125 12.41	4,109 12.56
30-39%	699 3.52	493 8.04	922 13.75	22 2.18	2,135 6.53
40-49%	351 1.77	156 2.54	453 6.75	6 0.60	967 2.96
50-100%	400 2.01	91 1.48	386 5.76	136 13.51	1,013 3.10
No Response	1,652 8.31	1,430 23.32	835 12.45	136 13.51	4,054 12.39
Totals	19,872	6,133	5,707	1,007	32,719

Table 2.9

Schools classified by attendance rate of pupil population and by urbanism of school with percents by column

Attendance rate of pupil population	Urbanism of school				
	Generally rural	Suburban	Urban	No Response	Totals
0-79%	373 1.88	197 3.21	304 5.33	123 12.21	969 2.96
80-89%	560 2.82	254 4.14	810 14.19	213 21.15	1,835 5.61
90-100%	17,284 86.98	5,094 83.06	4.255 74.56	640 63.56	27,273 83.36
No Response	1,655 8.33	599 9.77	338 5.92	49 4.87	2,642 8.07
Totals	19,872	6,133	5,707	1,007	32,719

Instructional Programs

There are many characteristics of instructional programs to observe. One of these is the degree to which a school has maintained the traditional six grades or has changed to a non-graded grouping organizational plan. The survey results reported in Table 2.10 show that the vast majority (over 75 percent) of schools were organized along graded lines during the 1968-69 school year. There was a trend toward more frequent use of the non-graded organization in the lower grades than in the upper grades.

Table 2.10

Schools classified by organization of grades two, four, and six (Percents given are of the total number of schools reporting.)

Organization	Grade		
	2	4	6
Graded	25,229 77.11	26,313 80.42	24,401 74.58
Non-graded	2,133 6.52	1,218 3.72	773 2.36
Both	2,786 8.51	2,439 7.45	2,317 7.08
No Response	2,571 7.86	2,748 8.40	5,228 15.98
Totals	32,719	32,719	32,719

Specialized and Community Personnel

The use of specialized and community personnel in schools is becoming more widespread. Specialized personnel consist of school nurses, counselors, psychologists, speech therapists, music and physical education instructors, and media specialists. Community personnel who are either paid for their services or are volunteer workers perform such duties as tutoring, supervising lunch rooms and playgrounds, and serving as teacher aides. The data in Table 2.11 reveal the number of schools who employed given ratios of specialized and community personnel to all regular teachers.

The use of specialized personnel was almost twice as prevalent as the use of community personnel at all of the higher ratios (10 percent and above). Only a small number of schools employ specialized or community personnel at a ratio approaching or exceeding one such person for every two regular teachers. Since there is no widely accepted criterion for the optimum number of special resources personnel, these data must be considered descriptive and not evaluative.

Facilities

The existence of special educational facilities such as a multipurpose room or a learning laboratory is generally considered to improve the quality of a school. The extent to which such facilities exist in Title I elementary schools can be seen in Table 2.12. Definitions of the terms used in Table 2.12 are as follows: A Media Center is a library, often containing audio-visual materials in addition to books; an Audio-Visual Room is one which can be darkened and to which classes are moved to view audio-visual materials; an Instructional Materials Production Center is a place where materials such as overhead transparencies, duplicated materials, copies, etc., can be prepared; a Learning Laboratory is a room containing booths, carrells, or work stations where students individually use instructional materials, often in audio-visual form. Few conclusions about the adequacy of facilities can be made because of a lack of comparative data for schools in general; however, the very low incidence of learning laboratories might be noted.

Table 2.11

Schools classified by specialized and community personnel as a percent of all regular teachers with percents by rows

	0-9%	10-19%	20-29%	30-39%	40-100%	No Response	Totals
Specialized personnel	10,485 32.04	9,930 30.35	6,545 20.01	3,237 9.89	1,862 5.68	660 2.02	32,719
Community personnel	17,541 53.61	6,416 19.61	4,116 12.58	1,907 5.83	2,025 6.19	714 2.18	32,719

Table 2.12

Number and percent of Title I elementary schools containing specialized facilities

Multi-Purpose Room	26,391 80.66
Central Media Center	21,035 64.29
Classroom Libraries	26,317 80.43
Learning Laboratories	1,750 5.35
Audio-Visual Room	12,557 38.38
Instructional Materials Production Center	19,165 58.58
Television Production Studios	1,465 4.48
Teacher Reference Center	17,777 54.33

The percentage of classrooms in Title I elementary schools equipped with various special facilities or equipment can be seen in Table 2.12. About one-fourth of all Title I elementary schools had no classrooms equipped with projection screens or light control devices such as shades. It is also noteworthy that about 84 percent of the schools had no independent study stations. Again, without comparative data it is difficult to judge the severity of these deficiencies. It is interesting that the size of the district in which a school is located had little bearing on the adequacy of its facilities. There were no significant deviations from the percentages shown in Table 2.12 when schools were categorized by size of school district. A tabulation of school equipment and facilities appears in Table 2.13.

Table 2.13

Schools classified by percent of classrooms equipped with special facilities and equipment with percent distribution by column

Percent of classrooms in school so equipped	Projection screens	Light control (e.g., drapes or shades)	In-room connection to TV antenna	In-room connection for closed circuit television	Independent study stations	Electrical outlets
None	7,528 23.01	7,977 24.38	19,755 60.38	28,626 87.49	27,556 84.22	1,372 4.19
1-10%	1,615 4.94	2,026 6.19	1,498 4.58	175 0.53	2,473 7.56	251 0.77
11-25%	2,908 8.89	2,333 7.13	1,552 4.74	187 0.57	1,008 3.08	325 0.99
26-50%	4,185 12.79	2,340 7.15	949 2.90	254 0.78	497 1.52	314 0.96
51-75%	2,845 8.70	2,078 6.35	1,137 3.48	312 0.95	258 0.79	966 2.95
76-90%	2,605 7.96	2,650 8.10	1,483 4.53	417 1.27	87 0.27	1,915 5.85
91-100%	9,734 29.75	12,006 36.69	5,313 16.24	2,198 6.72	513 1.57	22,100 67.55
No Response	1,299 3.97	1,309 4.00	1,032 3.16	550 1.68	327 1.00	5,476 16.74
Totals	32,719	32,719	32,719	32,719	32,719	32,719

Chapter III

The Need for Compensatory Education

School districts which were eligible to receive Title I funds used a number of criteria to decide which schools within a district should receive funds to conduct Title I programs. One commonly used criterion was the incidence of low-income families, but other measures of need were used as well. Once a school was selected to take part in Title I-assisted programs, any pupil within the school was eligible to participate in the program if, in the judgment of the school staff, he had a special need for the services offered. Schools were urged to concentrate on participation by the neediest pupils but determination of the "neediest" was left primarily to the school district personnel.

The purpose of the analyses in this chapter is to assess the need for compensatory education within elementary schools designated as Title I schools and to describe the extent of this need in various types of pupil and school. A need for compensatory education is defined as an educational deficit. By relating needs to context variables it is possible to learn where and for whom the need for compensatory education in Chapter IV. If it is found, for example, that "urbanism of school" is highly related to needs variables but is unrelated to Title I expenditure per participating pupil, then the efficiency of the resources allocation procedure may be called into question.

Extent and Severity of Needs for Compensatory Education

Needs Measured by Teachers' Judgments

Before entering upon an analysis of the relationship between needs for compensatory education and context variables related to those needs, it is important merely to record the incidence of various types of critical need. The following question was posed to the teacher of each pupil in the survey: "According to your knowledge of this pupil's critical needs, which of the following would you recommend that he participate in during the next school year?" There followed a list of eight compensatory programs which might be relevant to the pupil's critical needs. In the judgment of the teachers, the following numbers of pupils in grades two, four and six evidenced critical needs in the following areas:

Area of Critical Need for Compensatory Programs	Number of Pupils in Grades 2, 4 and 6	Percentage of All Pupils in Grades 2, 4 and 6*
Reading	2,463,500	43.0%
Language	2,136,000	37.3%
Mathematics	2,120,900	37.0%
Cultural Enrichment	1,546,700	27.0%
Health	633,900	11.1%
Psychological Counseling	543,800	9.5%
Food	373,400	6.5%
Special Education	307,000	5.4%

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[*] Percents do not sum to 100 percent because a pupil has more than one critical need.

The greatest incidence of critical needs was for compensatory reading programs. Among ancillary (non-academic) programs, the greatest need was in the area of cultural enrichment. Approximately 34 percent of the pupils were judged to have no critical needs for compensatory education.

Needs Measured by Standardized Achievement Tests

Information concerning achievement scores on standardized tests weighs heavily in the definition of a pupil's educational deficit in any academic area. Data from the 1969 Survey questionnaire included scores for pupils from standardized reading, language, and mathematics tests. These achievement test scores were from tests administered prior to the compensatory education programs conducted during the 1968-69 school year.

Several standardized tests were used by the school districts, but all data were reported in grade-equivalent units. The numbers of pretest scores available for grades two, four and six in reading, mathematics, and language are reported in Table 3.1 by type of test, frequency, and percent of total pretest sample represented by each type of test.

Pretest data were reported for only about half of the pupils at each of the three grade levels. Thus, the sample data project up to about one million pupils in each of grades two, four and six, with the exceptions of math and language tests at grade two for which far fewer cases were available. It must be emphasized that the sample of pupils for which standardized test data were available cannot be considered to be representative of all Title I pupils in grades two, four and six since such data were not available for half of the Survey sample.

Table 3.1

Types of achievement pretests reported in the 1969 Survey with frequencies and percents of total sample

Achievement Tests	Frequency in Sample	Percentage of Total Sample
California Achievement Tests	8,106	13.7%
Gates MacGinite Reading Tests	951	1.6%
Iowa Tests of Basic Skills	11,443	19.3%
Metropolitan Achievement Tests	15,053	25.4%
Science Research Associates Achievement Series	2,180	3.7%
Stanford Achievement Tests	16,481	27.9%
Other Achievement Tests	4,973	8.4%
Total Sample Size	59,187	100 %

Discrepancy pretest scores were calculated on the available data by subtracting a pupils' grade placement (e.g., 2.2 years in October of the second grade) at the time the pretest was given from the grade-placement score earned on the test. For example, a pupil scoring 1.4 yrs on the Metropolitan Reading Test in October of the second grade was given a discrepancy pretest score of 1.4 yrs - 2.2 yrs = -0.8 yrs, or eight months below grade level. The cumulative percentage distributions of the discrepancy pretest scores in reading, math and language for grades two, four and six are depicted in Figures 3.1-3.3. As an example of how such graphs are read, note that slightly less than 10 percent of the second graders obtained reading pretest scores at least 0.75 yrs below grade level; about 40 percent of the sixth-grade pupils score more than 0.75 yrs below grade level on the reading pretest.

The information in Figures 3.1-3.3 reveals important features of the nature of educational deficit among Title I pupils. Clearly, in each subject-matter area, large negative discrepancy scores become prevalent from the second to the fourth to the sixth grade, as those pupils who acquire basic academic skills move further away from those pupils who fail to acquire the rudiments of learning. For example, almost no pupils in grade two were reading more than 1.75 yrs below grade level; but by grade six, nearly 20 percent of the pupils lagged more than 1.75 yrs behind their grade level.

Misinterpretations of the data in Figures 3.1-3.3 are possible if the data are not studied cautiously. In each figure, the appearance is given that less than half of the pupils were performing below grade level in grade two, but that more than half of the fourth and sixth-grade pupils performed below grade level. This finding probably reflects the greater selectivity of the sample of second-grade pupils than of fourth

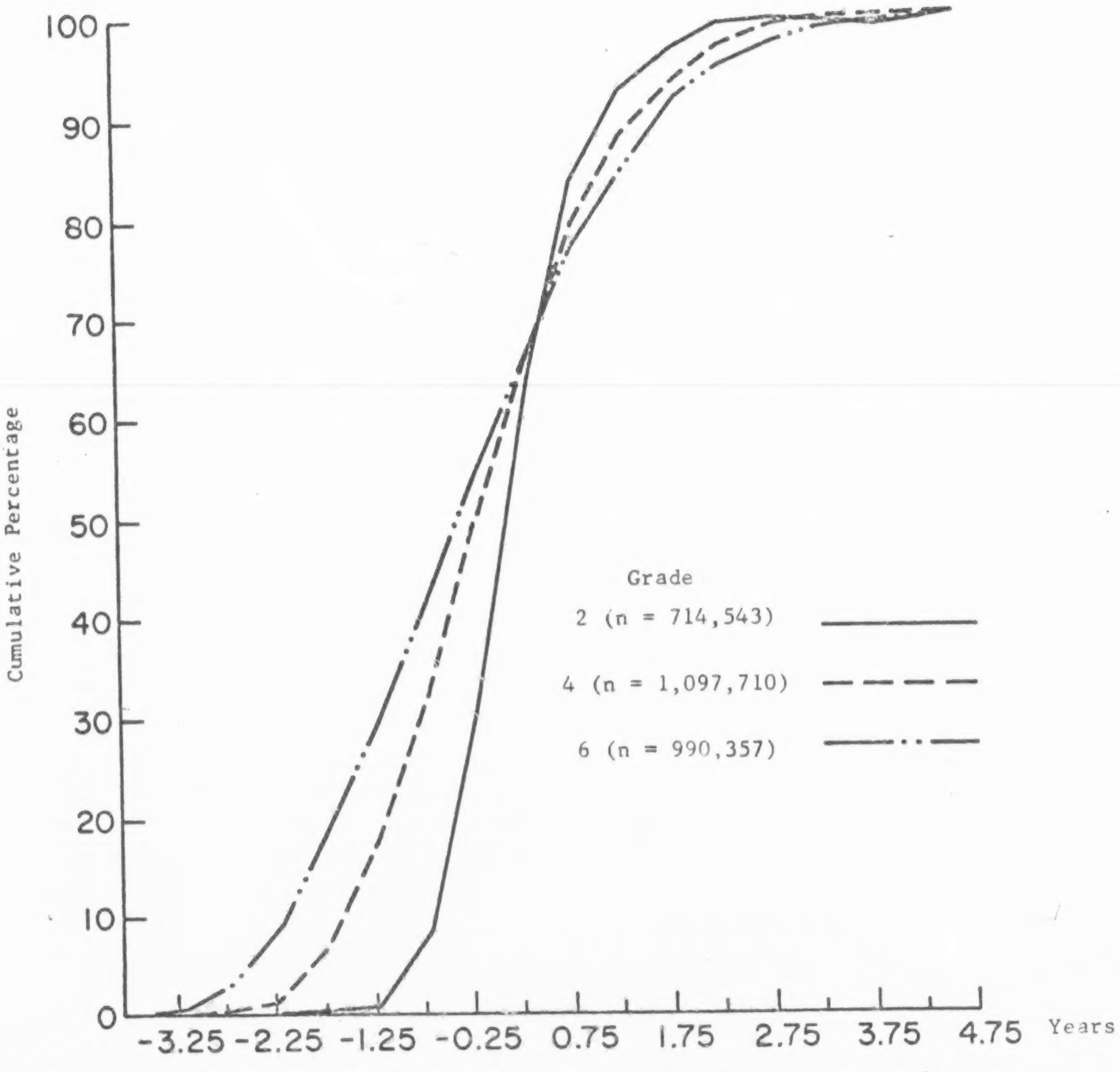

Figure 3.1. Cumulative percentage distribution of reading pretest discrepancy scores for pupils in grades 2, 4 and 6.

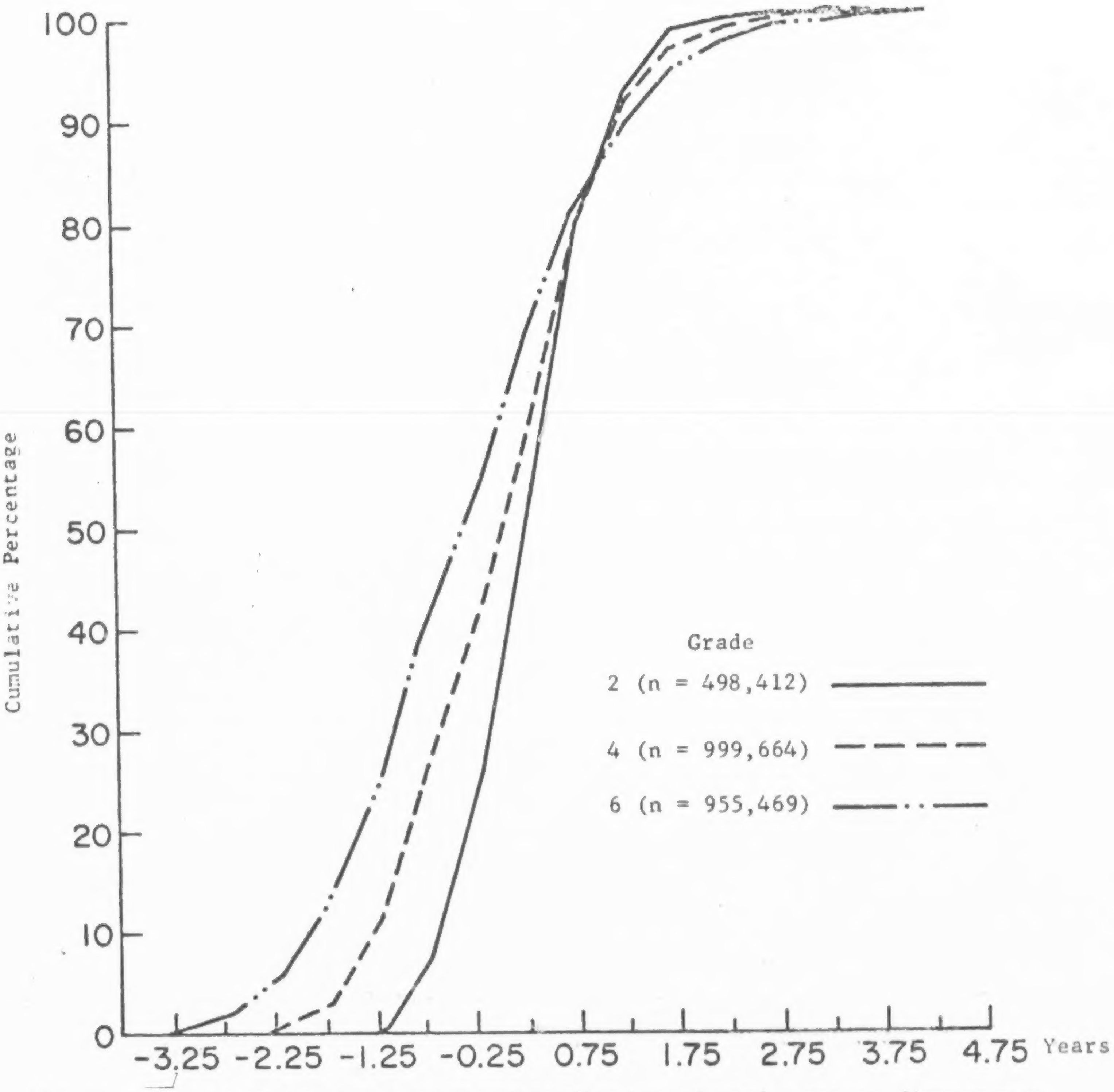

Figure 3.2. Cumulative percentage distribution of math pretest discrepancy scores for pupils in grades 2, 4, and 6.

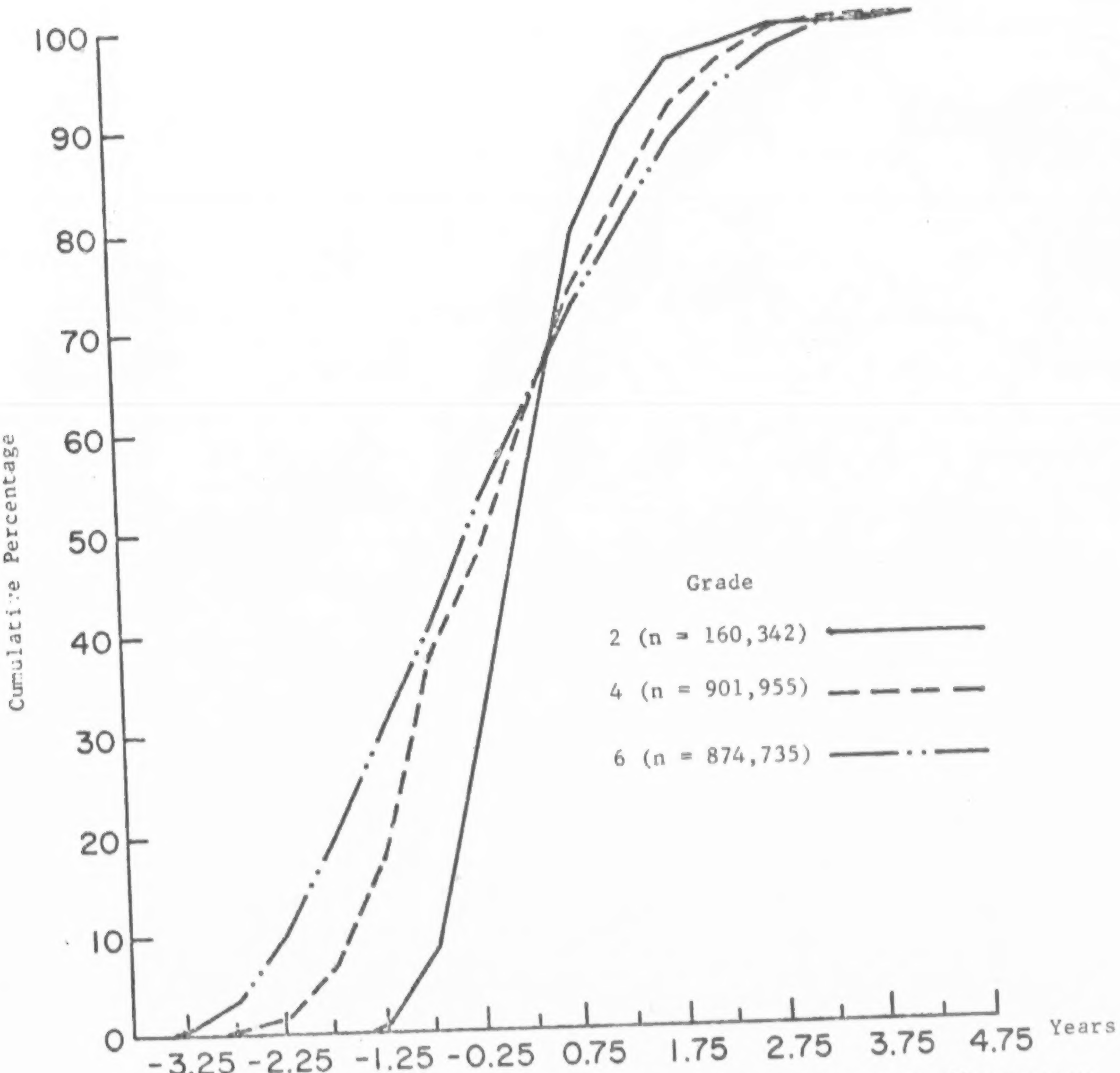

Figure 3.3. Cumulative percentage distribution of language pretest discrepancy scores for pupils in grades 2, 4 and 6.

and sixth-grade pupils: in reading, math and language there were approximately three-fourths, half and one-fifth, respectively, as many pupils in grade two with test scores as there were in grades four and six. Quite probably, the small group of second-grade pupils tested were generally less deprived than the larger groups of pupils tested at grades four and six. It would also be unwarranted to treat the cross-sectional findings in Figures 3.1-3.3 as though they were longitudinal data on a single cohort of pupils.

Relationship of Need to Context

Definitions of Levels Disadvantagement

"Educationally deprived" was not defined in PL89-10; and, unfortunately, no generally accepted definition has evolved during the short history of ESEA programs. The provisions of the law seem to imply two broad categories of disadvantaged pupils needing compensatory programs. One of these categories, "economically disadvantaged," may be inferred from those aspects of the law providing for basic life-support programs in health and food service. Needs in these areas arise primarily from economic deprivation and accordingly, for the purpose of this report, three categories of economic status were established:

1. Poor - children who are from families with annual income of $3,000 or less.
2. Low-Average Income - children who are from families with annual incomes from $3,000 to $6,000.

3. Above-Average Income - children who are from families with annual incomes about $6,000.

The law also provides for programs to compensate for educational deprivation through programs of remedial reading, assistance and training in arithmetic, help in the use of language, and cultural enrichment programs. A measure of general educational deficit was obtained by asking teachers to estimate, on the basis of a pupil's ability, how far that pupil would be expected to go in school. This information was used to classify each child as either a "potential dropout" or "not a potential dropout" before the completion of high school.

These two dimensions--economic deprivation and educational deprivation--were employed simultaneously to classify each child into one of the following six categories:

Levels of Disadvantagement

I. Poor and potential dropout
II. Low-Average income and potential dropout
III. Above-Average income and potential dropout
IV. Poor and not potential dropout
V. Low-Average income and not potential dropout
VI. Above-Average income and not potential dropout

Each of the categories, except the last one, represents some degree of disadvantagement. The indication of need expressed in the six categories above is used extensively throughout this report to indicate the relationship of needs to many of the context and allocation variables.

The two dimensions used to establish the needs categories are certainly not independent. If a pupil is severely deprived economically, he is more likely to be educationally deprived. This relationship is documented in Table 3.2 which shows that income per family member and pupils expected attainment on the basis of ability are highly related. As income per family member increased from less than $500 to over $2,600, the percentage of those not expected to go beyond the eighth grade decreased from 15 percent of less than one-half percent. Conversely, the percentage expected to enter college increased from 20 percent for the low income to 75 percent for the highest level of income per family members. There are over one million children (more than one to six) who were judged by their teachers as not having the ability to graduate from high school, and these are primarily from the low income families.

The numbers and percentages of pupils in grades two, four and six in Title I schools in each category of disadvantagement during the 1967-68 and 1968-69 school years were as follows:

1967-68 School Year

Level of Disadvantagement	Number	Percent*
I	441,900	6.9%
II	551,700	8.6%
III	227,200	3.5%
IV	679,300	10.6%
V	1,749,700	27.2%
VI	2,774,800	43.2%

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*Percentages are based on the total number of pupils not including "no response" on the level of disadvantagement variables.

1968-69 School Year

Level of Disadvantagement	Number	Percent*
I	317,800	5.8%
II	484,100	8.8%
III	191,000	3.5%
IV	434,500	7.9%
V	1,625,900	29.5%
VI	2,460,900	44.6%

The relationship between ethnic-group membership of pupils and their level of disadvantagement can be seen in Table 3.3. Greater degrees of disadvantagement among Negro and Spanish-surnamed pupils is clearly seen.

Poverty Level and Critical Needs for Compensatory Programs

The poverty level is strongly related to educational deficit is made evident by examining income level per family member and the number in each income-level category who display a critical need in various educational areas and in certain life support areas (see Table 3.4). Again, the percentage of pupils who displayed critical needs is highest in every area for the low income families, and this percentage decreased as the income per family member increased. These results tend to confirm the criterion of poverty as an indicator of need in school districts and in schools.

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*Percentages are based on the total number of pupils not including "no response" on the level of disadvantagement variables.

Table 3.2

Pupils classified by poverty level and by expected school attainment based on ability with percents by row.

Income per family member	Pupil's expected school attainment based on ability							
	8th grade or less	9th grade or 10th grade	11th or 12th grade; not graduation	Graduate from high school	Enter College	Other post high school education	No Response	Totals
$200-499	76150 14.87	74693 14.59	56101 10.96	177816 34.73	104761 20.46	17940 3.50	4501 0.88	511962
$500-799	87511 9.42	96019 10.33	92192 9.92	353635 38.06	251575 27.08	44660 4.81	3477 0.37	929069
$800-1099	42564 5.09	60533 7.23	67275 8.04	310708 37.13	301896 36.08	47845 5.72	5933 0.71	836754
$1100-1399	23049 3.23	30705 4.31	45376 6.36	252021 35.35	313577 43.99	45025 6.32	3148 0.44	712901
$1400-1699	23013 3.01	28244 3.69	41494 5.42	255102 33.33	367464 48.01	46503 6.08	3567 0.47	765387
$1700-1999	6468 1.17	9156 1.66	17223 3.12	138345 25.03	350321 63.39	29358 5.31	1775 0.32	552646
$2000-2299	10118 1.64	17772 2.87	26100 4.22	153751 24.85	375835 60.74	32311 5.22	2918 0.47	618805
$2300-2599	1241 1.91	2559 3.94	2909 4.48	18621 28.66	35275 54.29	3601 5.54	773 1.19	64979
$2600-2899	706 0.35	1267 0.63	2465 1.23	32804 16.38	150511 75.14	11504 5.74	1051 0.52	200308
No Response	24542 4.54	27281 5.04	34130 6.31	163092 30.14	249510 46.11	28656 5.30	13951 2.58	541162
Totals	295362 5.15	348229 6.07	385265 6.72	1855895 32.37	2500725 43.61	307403 5.36	41094 0.72	5733973

Table 3.3

Pupils classified by ethnic-group membership of disadvantagement

with percents by rows

Ethnic group of pupil	Type of pupil's disadvantagement							
	I	II	III	IV	V	VI	No Response	Totals
American Indian	732 3.15	2,608 11.21	698 3.00	2,530 10.88	8,606 37.01	6,812 29.29	1,368 5.88	23,354
Negro	167,554 12.90	163,773 12.61	28,087 2.16	257,275 19.81	445,964 34.34	172,704 13.30	63,759 4.91	1,299,116
Oriental	189 0.81	495 1.97	465 2.00	573 2.46	7,321 31.48	12,529 53.87	1,686 7.25	23,258
Spanish	31,920 9.90	52,222 16.19	6,785 2.10	40,346 12.51	125,596 38.93	53,499 16.58	13,455 4.17	323,823
White	112,615 2.82	260,948 6.52	153,384 3.83	129,576 3.24	1,023,869 25.60	2,195,078 54.88	124,130 3.10	3,999,600
No Response	4,766 7.15	4,039 6.06	1,556 2.33	4,159 6.24	14,516 21.77	20,301 30.45	15,489 23.23	64,826
Totals	317,776 5.40	484,085 8.23	190,975 3.25	434,459 7.39	1,625,872 27.64	2,460,923 41.84	219,887 3.74	5,733,977

Table 3.4

Pupils classified by poverty level and by type of critical needs with percents by number of pupils in row category

Income Per Family Member	Number of pupils who have each critical needs									
	In Math	In Reading	In Language	For Cultural Program	In Health	Psych. Help	Special Education	For Food Program	No Critical Needs	Total No. of Pupils
$200-499	304,604 59.50	350,548 68.47	321,543 60.85	231,704 45.26	152,478 29.78	67,739 13.23	51,681 10.09	141,666 27.67	53,398 10.43	511,963
$500-799	458,438 49.34	542,162 58.36	490,383 52.78	363,259 39.10	190,524 20.51	115,641 12.45	77,776 8.37	120,915 13.01	160,918 17.32	929,071
$800-1099	345,653 41.31	405,407 48.45	355,217 42.46	257,070 30.72	100,394 12.00	79,043 9.45	43,165 5.16	44,411 5.31	239,298 28.59	836,755
$1100-1399	247,736 34.75	278,214 39.03	243,093 34.10	173,969 24.40	50,062 7.02	57,635 8.08	30,138 4.23	12,737 1.79	257,932 36.18	712,900
$1400-1699	239,972 31.35	282,096 36.86	224,638 29.35	158,599 20.72	49,953 6.53	69,922 9.14	33,742 4.41	18,735 2.45	315,138 41.17	765,388
$1700-1999	125,779 22.76	145,711 26.37	111,065 20.10	92,324 16.71	14,249 2.58	38,525 6.97	16,721 3.03	1,593 129	285,974 51.75	552,646
$2000-2299	158,597 25.63	178,353 28.82	151,437 24.47	118,120 19.09	25,522 4.12	45,819 7.40	19,487 3.15	7,281 1.18	308,426 49.84	618,806
$2300-2599	18,383 28.29	23,484 36.14	16,783 25.83	11,600 17.85	3,692 5.68	6,389 9.83	2,966 4.56	958 1.47	28,662 44.11	64,979
$2600-2899	32,186 16.07	38,863 19.40	25,091 12.53	21,073 10.52	896 0.45	9,971 4.98	4,912 2.45	143 0.07	128,042 63.92	200,309
No Response	189,511 35.02	218,701 40.41	196,750 36.36	119,025 21.99	46,134 8.53	53,166 9.82	26,440 4.89	24,948 4.61	194,073 35.86	541,160
Totals	2,120,859 36.99	2,463,538 42.96	2,136,000 37.25	1,546,743 26.98	633,903 11.06	543,847 9.48	307,026 5.35	373,388 6.51	1,971,862 34.39	5,733,976

Many school districts have applied for and obtained Title I funds using the number of pupils from families on welfare as a criterion indicating need. Underlying this rationale is the assumption that such children will display significantly more deficiencies in educational and life support areas. The data in Table 3.5 support the credibility of this assumption. The percentage of pupils with critical needs is consistently higher for those who were from families on welfare than for those who were not. In fact, the percentage of those on welfare is almost double the percentage of those not on welfare for nearly every area of need surveyed.

Level of Disadvantagement and Critical Needs for Compensatory Programs

The evidence cited thus far in this chapter illustrates the strong relationship between poverty and educational and life support deficits. Obviously, however, there are many children from families not suffering from poverty who have critical needs, and conversely, there are children from poor families who may not have needs in every area. For the above reason, the six-category disadvantagement classification discussed earlier seemed most appropriate. The relationship of critical needs to type of disadvantagement is given in Table 3.6. In every area of critical need, the percentage of pupils having that need decreased as the degree of disadvantagement decreased.

School Location and Critical Needs for Compensatory Education

Every type of school location--rural, suburban, urban--had many pupils in each of the categories of disadvantagement (see Table 3.7).

Table 3.6

Pupils classified by type of disadvantagement and by type of critical need with percentages by number of pupils in row category*

Type of pupil disadvantagement	Number of pupils who have each critical need									
	In math	In reading	In language	For cultural program	In health	Psych. educ.	Special educ.	For food program	No critical needs	Total no. of pupils
I	237,074 74.60	277,751 87.40	247,218 77.80	129,877 40.87	113,004 35.56	62,139 19.56	62,855 19.78	94,123 29.62	7,061 2.22	317,776
II	358,092 73,97	425,480 87.89	361,422 74.66	178,428 36.86	122,943 25.40	89,452 18.48	81,649 16.87	55,955 11.56	14,070 2.91	484,084
III	137,140 71.81	164,695 86.24	132,967 69.63	44,878 23.50	21,465 11.24	40,064 20.98	30,934 16.20	4,686 2.45	6,149 3.22	190,974
IV	207,760 47.82	227,771 52.43	234,678 54.02	207,762 47.82	100,698 23.18	45,604 10.50	19,831 4.56	109,376 25.18	63,972 14.72	434,459
V	590,486 36.32	658,452 40.50	603,149 37.10	517,802 31.85	184,833 11.37	144,186 8.87	46,329 2.85	82,234 5.06	498,510 30.66	1,625,873
VI	513,369 20.86	609,659 24.77	477,552 19.41	405,984 16.49	68,905 2.80	142,854 5.80	53,076 2.16	14,935 0.61	1,326,635 53.91	2,460,922
No Response	86,946 39.54	99,730 45.36	89,013 40.48	63,102 28.70	21,655 9.85	19,547 8.89	12,351 5.62	12,077 5.49	55,465 25.22	219,887
Totals	2,120,859 36.99	2,463,538 42.96	2,136,000 37.25	1,546,743 26.98	633,903 11.06	543,847 9.48	307,026 5.35	373,386 6.51	1,971,862 34.39	5,733,976

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*Percents do not sum to 100 across rows since a pupil could be classified as having more than one critical need.

Table 3.7

Pupils classified by urbanism of school and by type of disadvantagement with percents by column

Urbanism of school	Type of pupil's disadvantagement							
	I	II	III	IV	V	VI	No Response	Totals
Generally rural	187,430 58.98	227,133 46.92	85,304 44.67	241,915 55.68	806,630 49.61	1,206,512 49.02	97,401 44.30	2,852,325 49.75
Suburban	32,607 10.26	78,597 16.23	52,308 27.39	39,978 9.20	253,513 15.59	739,091 30.04	38,944 17.71	1,235,038 21.59
Urban	81,406 25.62	148,945 30.77	42,562 22.24	132,088 30.41	461,650 28.40	351,870 14.30	69,111 31.43	1,287,633 22.46
No Response	16,331 5.14	29,409 6.08	10,800 5.66	20,477 4.71	104,078 6.40	163,448 6.64	14,432 6.56	358,975 6.26
Totals	317,774	484,084	190,974	434,458	1,625,872	2,460,921	219,888	5,733,971

Rural schools, with about 50 percent of the Title I pupils, had 60 percent of the pupils who were both poor and potential dropouts. Urban schools, with 22 percent of the Title I pupils had 25 percent of the children who were multiply disadvantaged (level I). Suburban schools accounted for about 22 percent of the Title I pupils, but for only about 10 percent of the multiply disadvantaged (level I). These figures indicate that a somewhat disproportionately large number of disadvantaged pupils were in rural schools and that suburban schools had a disproportionately small number of such children. This general trend is apparent across all levels of disadvantagement. At the other end of the scale, suburban schools accounted for a large number of the pupils who were neither poor nor potential dropouts while urban schools had fewer such pupils than would be expected if the distribution of the disadvantaged was proportional across school location. The relationship between urbanism and type of disadvantagement was relatively weak, however, and was certainly not strong enough to exclude any category of urbanism from consideration for compensatory education.

Ethnic-Group Membership and Needs for Compensatory Education

The race or ethnic group of pupils in Title I schools was strongly related to expected educational attainment and to critical needs for compensatory education (see Tables 3.8 and 3.9). More than 70 percent of Oriental pupils were expected to enter college or pursue other post-high-school education. This compares with less than 40 percent for

Table 3.8

Pupils classified by race and by expected school attainment based on ability with percents by row

Race of pupil	Pupil's expected school attainment based ability							
	8th grade or less	9th grade or 10th grade	11th or 12th grade; not graduation	Graduate from high school	Enter college	Other post high school education	No Response	Totals
American Indian	462 1.98	1702 7.29	1898 8.13	10598 45.38	7512 32.16	944 4.04	239 1.02	23355
Negro	121494 9.35	124606 9.59	129403 9.96	441112 33.95	411678 31.69	62424 4.81	8401 .65	1299118
Oriental	180 0.77	196 0.84	889 3.82	4860 20.90	15559 66.90	1464 6.29	109 .47	23257
Spanish-surnamed	28795 8.89	35471 10.95	30472 9.41	127401 39.34	87467 27.01	12260 3.79	1958 .60	323824
White	140586 3.52	182512 4.56	218717 5.47	1254178 31.36	1954272 48.86	227536 5.69	21798 .55	3999599
No Response	3842 5.93	3744 5.78	3888 6.00	17746 27.38	24236 37.39	2777 4.28	8591 13.25	64824
Totals	295359	348231	385267	1855895	2500724	307405	41096	5733977

Table 3.9

Pupils classified by ethnic group and by type of critical need with percents by number of pupils in row category*

Ethnic group or pupil	Area of critical need									
	In math	In reading	In language	For cultural program	In health	Psych. help	Special educ.	For food program	No critical needs	Total no. of pupils
American Indian	9,284 39.75	10,887 46.62	8,951 38.33	8,038 34.42	4,227 18.10	2,955 12.65	744 3.19	1,446 6.19	5,885 25.20	23,354
Negro	724,065 55.74	792,360 60.99	768,213 59.13	598,652 46.08	246,093 18.94	163,078 12.55	104,402 8.04	203,008 15.63	167,538 12.90	1,299,115
Oriental	4,744 20.40	6,768 29.10	8,048 34.61	5,910 25.41	1,073 4.61	1,188 5.11	621 2.67	398 1.71	11,389 48.97	23,256
Spanish-surnamed	155,647 48.07	193,565 59.78	203,111 62.72	124,958 38.59	53,588 16.55	33,688 10.40	21,151 6.53	35,354 10.92	53,071 16.39	323,822
White	1,200,882 30.03	1,431,133 35.78	1,121,718 28.05	792,658 19.82	322,633 8.07	337,755 8.44	177,765 4.44	128,299 3.21	1,720,544 43.02	3,999,599
No Response	26,235 40.47	28,825 44.46	25,958 40.04	16,525 25.49	6,291 9.70	5,184 8.00	2,343 3.61	4,890 7.54	13,436 20.73	64,827
Totals	2,120,859 36.99	2,463,538 42.97	2,136,000 37.25	1,546,743 26.98	633,903 11.06	543,847 9.48	307,026 5.35	373,395 6.51	1,971,863 34.39	5,733,976

*Percents do not sum to 100 for each row because a child may have more than one critical need.

American-Indians and Spanish-surnamed, about 36 percent for Negro, and 55 percent for white pupils. It can be seen that almost 10 percent of the Negro and Spanish-surnamed were not expected by their teachers to go beyond the eighth grade when ability alone was considered. Another striking conclusion apparent in these data is that nearly 30 percent of Negro and Spanish-surnamed pupils were not expected to complete high school. This contrasts sharply with the percentages for Oriental (6 percent and white pupils (14 percent).

Similar conclusions may be drawn from an examination of the relationship of ethnic group to critical needs in educational and life support areas (see Table 3.9). The Spanish-surnamed, Negro, and American Indian ethnic groups again showed far greater proportions of individuals with critical needs. It may be inferred from the above discussion that any program of compensatory education which meets critical needs will direct a relatively higher proportion of its resources to pupils of minority ethnic classifications than to the majority classification. It should be noted again that these data are based on teacher judgment and teacher estimates. Obviously, there will be some unknown amount of unreliability in the data caused by only partial knowledge and by the inaccuracies inherent in predicting human behavior. Also, there is probably a tendency to generalize across categories of need for individuals. Thus, if Negro pupils were seen in general by teachers to be low academic achievers, then there may have been a tendency to place Negroes about whom there is doubt in a category of limited potential attainment. In spite of these deficiencies in the data, it can be argued that it is the teachers who have the most intimate knowledge of the many important aspects of their pupils lives and, consequently, were in the best position to judge.

Deficits in Reading

Some further insight into the relationship of need to other context variables is gained by examining in detail the one skill judged most basic to educational achievement--reading. Because of the importance of reading to the attainment of educational and vocational goals, several ways were used to obtain data on this one characteristic. First, for each child in the Survey, teachers were asked to indicate if there was a critical need in reading. Data obtained this way has already been used in this chapter. In addition, teachers were asked to estimate the number in their class who were reading below grade level. An average class would, by definition, have half of its members reading below grade level. It is the departures from the 50 percent level that may be interpreted as an indicator of whether compensatory education is needed. A third indicator of need in reading was given by principals who were asked to estimate the percentage of pupils in their school who were reading one year or more below grade level. In the succeeding paragraphs, each of these indicators of reading achievement is examined along with its relationship to some context variable.

A comparison of percentage of pupils below national norm in reading achievement with urbanism of school reveals that suburban schools had the fewest pupils per school in need of compensatory reading programs. Rural schools rank second in percentage below national norms with urban schools showing the greatest need for compensatory reading programs. In Table 3.10 the data reveal that only about 6 percent of the suburban schools had 70-100 percent of their pupils reading more than one year below grade level. The corresponding percentages for rural and urban schools were 8.41 percent and 21.75 percent, respectively. These data clearly indicate a trend toward more pupils with serious reading problems from suburban to rural to urban schools.

The general trend toward the concentration of children with educational deficits in schools with high concentrations of children from families on welfare is also true in the specific case of reading deficit. When schools are classified as to these two dimensions of concentration (see Table 3.11) it is apparent that the two types of concentration are related. A school with a high concentration of pupils from families on welfare is much more likely to have a higher concentration of pupils reading more than one year below grade level. The opposite is also true. This relationship may be observed in Table 3.11 by noting the relatively high percentages near the diagonal cells from upper left to lower right.

The need for compensatory education in reading as indicated by the percentage of children within a school reading more than one grade level below national norms is also related to the concentration of racial or ethnic minorities in the school. Here again, schools with high concentrations of Spanish or Negro students tend to have high concentrations of pupils who are reading more than one year below grade level (Tables 3.12 and 3.13).

Table 3.10

Schools classified by percent of pupils in school more than one grade level below national norm in reading achievement and by urbanism of school with percent distribution by columns

Percent pupils more than one grade level below national norm in reading	Urbanism of school				
	Generally Rural	Suburban	Urban	No Response	Totals
0-29%	4,989 25.11	1,647 26.85	451 7.91	168 16.67	7,255 22.17
30-49%	4,403 22.16	1,021 16.64	1,054 18.48	314 31.15	6,792 20.76
50-69%	1,846 9.29	515 8.40	891 15.62	14 1.39	3,266 9.98
70-100%	1,672 8.41	400 6.52	1,241 27.75	37 4.63	3,350 10.24
No Response	6,961 35.03	2,551 41.59	2,068 36.25	475 47.15	12,055 36.84
Totals	19,871	6,134	5,705	1,008	32,719

Table 3.11

Schools classified by percent of pupils in school with family on welfare and by percent of pupils in school more than one grade level below national norm in reading achievement with percent distribution by columns

Percent of pupils in class with family on welfare	Percent of pupils in school more than one grade below national norm in reading achievement					
	0-29%	30-49%	50-60%	70-100%	No Response	Totals
None	524 7.22	182 2.68	73 2.24	0 0.00	733 6.08	1,512 4.62
1-10%	4,978 68.61	3,464 51.00	1,330 40.72	912 27.22	6,191 51.36	16,676 51.58
11-25%	971 13.38	1,841 27.12	836 25.60	785 23.43	2,399 19.90	6,831 20.88
26-50%	230 3.17	668 9.84	563 17.24	655 19.55	1,089 9.04	3,206 9.80
51-100%	104 1.43	64 0.94	207 6.34	772 23.04	549 4.55	1,694 5.18
No basis for estimation	348 4.80	482 7.10	105 3.21	190 5.67	788 6.54	1,914 5.85
No Response	99 1.36	92 1.35	152 4.65	35 1.04	306 2.54	686 2.10
Totals	7,255	6,792	3,266	3,350	12,055	32,719

Table 3.12

Schools classified by percent of pupils in school who are Spanish-surnamed and by percent of pupils in school more than one grade level below national norm in reading achievement with percents by row

Percent Spanish-surnamed	Percent of pupils in school more than one grade level below national norm in reading achievement											
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-100	No Response	Totals
None	16 0.10	1,477 9.23	2,231 13.94	2,156 13.47	1,495 9.34	805 5.03	532 3.33	533 3.33	240 1.50	389 2.43	6,130 38.31	16,004
1-10%	41 0.54	652 8.65	1,387 18.29	636 8.44	713 9.46	497 6.59	237 3.14	244 3.23	197 2.62	156 2.06	2,782 36.89	7,541
11-25%	0 0	15 1.41	99 9.28	152 14.25	119 11.15	146 13.64	33 3.06	19 1.78	19 1.78	35 3.28	431 40.38	1,067
26-50%	0 0	7 0.65	6 0.54	150 13.18	185 16.25	119 10.47	33 2.93	129 11.32	93 8.18	27 2.34	388 34.14	1,138
51-75%	0 0	7 1.13	33 5.20	176 27.58	16 2.49	47 7.40	48 7.53	32 5.00	17 2.62	16 2.50	246 38.54	639
76-90%	0 0	0 0	4 1.99	12 6.06	14 7.33	0 0	15 7.86	6 3.04	22 11.59	19 9.89	101 52.25	193
91-100%	0 0	0 0	0 0	4 2.22	9 5.25	6 3.42	2 1.19	2 1.36	32 18.78	28 16.51	87 51.30	169
No Response	46 0.77	361 6.05	872 14.62	526 8.82	431 7.22	239 4.00	508 8.51	275 4.60	402 6.73	418 7.01	1,889 31.69	5,967
Totals	103	2,519	4,632	3,812	2,982	1,859	1,408	1,240	1,022	1,088	12,054	32,719

Table 3.13

Schools classified by percent of pupils in school who are Negro and by percent of pupils in school more than one grade level below national norm in reading achievement with percents by row

Percent Negro	Percent of pupils in school more than one grade level below national norm in reading achievement										
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-100	No Response	Totals
None	14 0.12	1,113 9.36	2,264 19.03	1,924 16.17	983 8.27	439 3.69	230 1.94	136 1.14	172 1.45	57 0.48	4,563 38.36	11,894
1-10%	58 0.61	1,004 10.54	1,609 16.89	1,173 12.34	1,190 12.49	660 6.92	320 3.36	233 2.45	101 1.06	122 1.29	3,046 32.01	9,515
11-25%	2 0.06	231 6.46	341 9.54	449 12.56	388 10.84	219 6.11	121 3.38	242 6.78	98 2.73	30 0.83	1,455 40.70	3,576
26-50%	0 0	22 1.49	58 3.96	59 3.98	94 6.37	156 10.59	178 12.07	73 4.91	35 2.39	69 4.67	732 49.58	1,477
51-75%	0 0	2 0.32	57 8.86	12 1.82	24 3.71	88 13.75	78 12.22	58 9.08	28 4.32	41 0.39	253 39.56	639
76-90%	0 0	2 0.80	8 2.69	6 2.12	7 2.34	21 7.36	10 3.73	22 7.82	26 9.42	46 16.64	131 47.07	279
91-100%	29 0.68	111 2.64	99 2.36	65 1.55	171 4.06	217 5.16	336 7.98	460 10.92	557 13.23	695 16.52	1,469 34.91	4,209
No Response	0 0	35 3.06	198 17.54	124 10.98	126 11.12	59 5.20	134 11.88	16 1.44	6 0.52	27 2.37	406 35.90	1,130
Totals	103	2,519	4,632	3,812	2,982	1,859	1,408	1,240	1,022	1,088	12,054	32,719

Some further insight into the composition of classes most in need of compensatory education is provided by noting the relationship between the race or ethnic group of the teacher and the percentage of his class reading below grade level (see Table 3.14). Nearly 22 percent of the Negro teachers had classes in which more than three-fourths of the pupils were reading below grade level. On the other hand, only 8 percent of the white teachers were reaching such classes. Part of this discrepency is explained (though not justified) by the tendency of Negro teachers to obtain teaching assignments in rural and urban areas and in schools with heavy concentrations of minority groups (where the incidence of educational deficit has been shown to be most prevalent). At this point it is not possible to judge the appropriateness of this disproportionality, but only to note its existence as another dimension in the framework of need for compensatory education.

Table 3.14

Teachers classified by race and percent of class members who are below grade level in reading with percents by row

Ethnic group of teacher	Percent of class members who are below grade level in reading								
	None	1-10%	11-25%	26-50%	51-75%	76-90%	91-100%	No Response	Totals
American Indian	0 0	38 31.15	32 26.23	17 13.93	13 10.66	2 1.64	19 15.57	0 0	122
Negro	590 1.66	6,415 18.02	6,484 18.22	7,583 21.30	6,338 17.81	5,106 14.34	2,614 7.34	464 1.30	35,596
Oriental	44 3.93	156 13.92	207 18.47	232 20.70	191 17.04	171 15.25	113 10.08	7 0.62	1,121
Spanish-surnamed	45 2.79	244 15.15	640 39.73	178 11.05	222 13.78	141 8.75	97 6.02	45 2.79	1,611
White	7,553 4.31	43,787 25.01	53,140 30.35	40,396 23.07	14,392 8.22	6,413 3.72	7,418 4.24	1,872 1.07	175,070
No Response	92 3.72	434 17.54	690 27.88	347 14.02	422 17.05	153 6.18	92 3.72	245 9.90	2,475
Totals	8,324 3.85	51,076 23.65	61,193 28.33	48,752 22.57	21,578 9.99	12,087 5.60	10,353 4.79	2,632 1.22	215,995

Chapter IV

Allocation of Resources for Compensatory Education

From a nation-wide point of view, the evaluation of compensatory education in these formative years of Title I of the Elementary and Secondary Education Act must be largely an evaluation of the process of allocation of resources.

Resources for compensatory education can be measured both in terms of dollar expenditures and participation in special programs. Measures of these resources are related to context measures which are descriptive of the need for compensatory programs. Examination of these relationships will provide answers to questions of the following types:

1. How does a district's or state's per pupil expenditure of Title I funds relate to the need for compensatory education programs?
2. How does the type of program (disadvantaged, regular or enrichment) a pupil participated in relate to his need for compensatory education?
3. How does the amount of time a pupil spends in compensatory programs relate to his need for such programs?
4. In what ways and to what extent do programs for disadvantaged pupils differ from regular academic programs? Are they truly expansions and improvements of regular school programs?
5. How does a teacher's participation in in-service training for teaching the disadvantaged relate to the teacher's need for such training?

These and similar questions posed in Chapter I provide the framework within which analyses of resources allocation are reported.

Expenditures of Title I Funds at the School District Level

Per Pupil Expenditures from Title I

A special survey of school districts' expenditures of Title I monies was conducted in January 1969, three months before the major 1969 Survey. The results of the former survey were reported in Chapter

II of *Education of the Disadvantaged: An Evaluative Report on Title I, Elementary and Secondary Education Act of 1965 (Fiscal Year 1968)*. Only the principal findings of the expenditures survey will be repeated here:

1. Although the national average allocation of Title I funds was $156.90 per poor child in 1968-69, high-expenditure districts (those regularly spending more than $625 per pupil for normal schooling) received an average of $257 per poor child, moderate-expenditure districts($425-625 regular per pupil expenditure) received $142, and low-expenditure (less than $425 regular per pupil expenditure) districts received $149 per poor child.
2. High-expenditure districts received 16 percent of all Title I funds allocated in 1968-69, although they enrolled only 10 percent of the resident poor children.
3. High-expenditure districts allocated an average of $226 in Title I funds for each compensatory education program participant. The comparable figures for moderate- and low-expenditure districts were $174 and $108 per program participant, respectively.

Title I Expenditures at the District Level

The "per participating pupil Title I expenditure" was calculated for each school district by dividing the total expenditure of Title I funds in the district by the total number of pupils at all grade levels who participated in any compensatory program during either the summer of 1968 or the 1968-69 academic year. The distribution of per participating pupil Title I expenditures for the 9,234 school districts is as follows:

Per Participating Pupil Title I Expenditure	Number of School Districts	Percentage of School Districts
$ 0- 99	1,613	17.47%
$100-199	3,253	35.23%
$200-299	1,511	16.36%
$300-399	409	4.43%
More than $400	223	2.41%
No data reported	2,225	24.10%
	9,236	100%

A substantial number of school districts did not report adequate data. Among the 7,009 districts reporting the relevant data, approximately half (46.41 percent) allocated between $100 and $200 of Title I funds for the average participating pupil..

Districts were grouped into three classes based on their yearly regular expenditure per pupil exclusive of federal monies. The three classes of regular expenditure are as follows:

Low expenditure: less than $425 per pupil,
Middle expenditure: between $425 and $625 per pupil,
High expenditure: more than $625 per pupil.

Districts classified according to their regular and Title I per participating pupil expenditures are shown in Table 4.1. Of particular note here are the 2,294 (71 percent) districts of the lowest regular expenditure category that are also in the two lowest Title I expenditure classes (less than $200 per pupil).

The data presented in Table 4.1 suggest that the federal formula for allocating Title I funds provides proportionally less monies to the financially poorer districts, where presumably the need is greatest, than it does to the richer districts. (However, the high rate of non-response to the questions on which per participating pupil expenditure calculations were based must be taken into account in interpreting these data.)

Per Pupil Expenditures of Title I Funds and Pupil Characteristics

No data were available on the number of Title I dollars spend per individual participant -- calculations could only be made for the average participating pupil in a school district. It was possible to observe pupil characteristics, e.g., ethnic-group membership, and how this characteristic related to the districts' allocation of Title I funds per participating pupil.

The distribution of second-, fourth-, and sixth-grade pupils in school districts spending differing amounts per pupil participating in compensatory education programs appears in Table 4.2. It is apparent that approximately 57 percent of the pupils were in school districts which spent less than $200 of Title I funds on each pupil participating in compensatory programs.

Table 4.1

Districts classified by regular per pupil expenditure and per participating pupil expenditure of Title I funds, with percents by column

Participating Per Pupil Title I Expenditure	Regular per pupil expenditure				
	Less than $425	$425-625	More than $625	No Response	Totals
$0-99	616 19.05	729 16.55	247 17.20	21 13.21	1,613 17.47
$100-199	1,678 51.90	1,087 24.67	440 30.64	48 30.19	3,253 35.23
$200-299	311 9.62	882 20.02	292 20.33	26 16.35	1,511 16.36
$300-399	70 2.17	231 5.24	108 7.52	0 0	409 4.43
More than $400	64 1.98	137 3.11	22 1.58	0 0	223 2.41
No Response	494 15.28	1,340 30.41	327 22.77	64 40.25	2,225 24.10
Totals	3,233	4.406	1,436	159	9,234

Data are presented in Table 4.3 which show the relationship between pupils' ethnic-group membership and the per participating pupil expenditure of Title I funds of their school district. Note that approximately 14 percent of all Negro pupils were in districts expending between $0-99 per participating pupil, and 49 percent were in districts expending $100-199 per participant. The comparable percentages for white pupils were 19 percent and 36 percent. At least for these two largest ethnic groups, a greater proportion of the more needy pupils (the Negroes) than of the presumably less needy pupils (the whites) were in school districts with the higher per participant expenditure. (It must be noted that the rate of indeterminate expenditure, i.e., "No Response," was twice as high for white pupils, 23 percent, as for Negro pupils, 12%.) The tendency for need to be related to concentration of funds, with respect to Negroes and whites, contrasts sharply with the distributions of expenditures for American Indians and Orientals. The American Indians, who have the greater need, were in districts spending generally less Title I money per participating pupil than the Orientals. Nearly half of the American Indians were in districts which allocated less than $200 per participant in compensatory programs; only about one quarter of the Oriental pupils were in the comparable expenditure

Table 4.2

Pupils classified by school district's per participating pupil expenditure of Title I funds

Per Participating Pupil Expenditure of Title I Funds	Number of Pupils	Percent of Pupils
$ 0- 99	1,129,090	20%
$100-199	2,192,913	38%
$200-299	965,802	17%
$300-399	182,306	3%
$400-699	108,754	2%
No Response	1,155,112	20%
	5,733,976	

Table 4.3

Pupils classified by ethnic-group membership and by per pupil expenditure of Title I funds with percentages by rows

Ethnic-group of pupil	Per pupil expenditure of Title I funds						
	$0-99.99	$100-199.99	$200-299.99	$300-399.99	$400-699.99	No Response	Totals
American Indian	5,407 23.15	5,926 25.37	3,288 14.08	1,646 7.05	461 1.98	6,628 28.38	23,356
Negro	186,845 14.38	636,816 49.02	242,222 18.65	47,224 3.64	28,088 2.17	157,920 12.16	1,299,115
Oriental	1,409 6.06	4,529 19.47	12,726 54.72	574 2.47	1,607 6.91	2,413 10.37	23,258
Spanish	61,460 19.98	108,896 33.63	79,819 24.65	14,560 4.50	15,825 4.89	43,261 13.36	323,821
White	765,028 19.13	1,426,105 35.66	700,397 17.51	116,886 2.92	60,942 1.53	930,240 23.26	3,999,598
No Response	10,622 16.39	25,400 39.18	10,906 16.82	1,413 2.18	1,835 2.83	14,650 22.60	64,826
Totals	1,030,771	2,207,672	1,049,358	182,303	108,758	1,155,112	5,733,974

Table 4.4

Pupils classified by per participating pupil expenditure of Title I funds and by type of disadvantagement with percents by columns

Per pupil expenditure of Title I funds'	Type of pupil's disadvantagement							
	I	II	III	IV	V	VI	No Response	Totals
$0-99.99	58,691 18.47	98,258 20.30	36,415 19.07	86,216 19.85	321,183 19.76	488,251 19.84	40,076 18.23	1,129,090 19.70
$100-199.99	157,478 49.56	204,226 42.19	65,043 34.06	219,418 50.50	647,153 39.80	817,847 33.23	81,748 37.18	2,192,913 38.21
$200-299.99	38,566 12.14	86,110 17.79	37,165 19.46	57,034 13.13	293,027 18.02	412,922 16.78	40,978 18.63	965,802 16.85
$300-399.99	10,712 3.37	13,967 2.88	6,810 3.57	10,993 2.53	49,645 3.05	81,365 3.31	8,812 4.01	182,304 3.18
$400-699.99	3,818 1.20	8,395 1.73	2,478 1.29	7,643 1.76	6,927 2.27	41,312 1.68	8,184 3.72	108,757 1.91
No Response	48,510 15.26	73,128 15.11	43,064 22.55	53,155 12.23	277,938 17.10	619,227 25.16	40,091 18.23	1,155,113 20.15
Totals	317,775	484,084	190,975	434,459	1,625,873	2,460,924	219,889	5,733,979

Table 4.5

Pupils classified by per pupil of Title I funds and type of critical needs with percentages by number of pupils in row category

Per pupil expenditure of Title I funds	Area of critical need									
	In Math	In Reading	In Language	For Cultural Program	In Health	For Psych. Services	For Special Educ.	For Food Program	No Critical Needs	Total No. of Pupils
$0-99.99	418,061 37.02	462,383 40.95	423,218 37.48	324,512 28.74	130,970 11.60	103,520 9.17	67,415 5.97	72,277 6.40	394,491 34.94	1,129,090
$100-199.99	856,507 39.06	973,980 44.41	861,955 39.31	618,433 28.20	256,546 11.70	184,169 8.40	122,476 5.59	176,615 8.05	709,536 32.36	2,192,913
$200-299.99	357,509 37.02	429,196 44.44	374,836 38.81	273,667 28.34	100,518 10.41	100,616 10.42	48,430 5.01	58,857 6.09	328,425 34.01	965,800
$300-399.99	74,799 41.03	76,619 42.03	71,449 39.19	44,518 24.42	18,320 10.05	18,790 10.31	8,579 4.71	8,901 4.88	60,228 33.04	182,305
$400-699.99	46,570 42.82	52,371 48.15	46,826 43.06	26,743 24.59	10,544 9.70	12,578 11.57	4,358 4.01	5,199 4.78	33,803 31.08	108,756
No Response	367,413 31.81	468,988 40.60	357,714 30.97	258,869 22.41	117,005 10.13	124,174 10.75	55,767 4.83	51,538 4.46	445,397 38.56	1,155,111
Totals	2,120,859 36.99	2,463,538 42.97	2,136,000 37.25	1,546,743 26.98	633,903 11.06	543,847 9.48	307,026 5.35	373,388 6.51	1,971,862 34.39	5,733,976

category. Together these two ethnic groups constituted less than one percent of the population of pupils.

The relationship between a pupil's membership in a family receiving welfare (AFDC) and district per participating pupil Title I expenditure was also studied. No very strong relationship was observed between these two factors. There existed a slight tendency for pupils on welfare to reside in districts spending more per participant -- 31 percent of the welfare pupils were in districts spending over $200 per participating pupil and 23 percent of the non-welfare pupils were in this category -- but the relationship was rather weak and the rate of "no response" by the district to the expenditures item on the questionnaire was six percent greater for non-welfare than for welfare pupils.

Bases for Allocation of Title I Funds Used by Districts

Once a school district receives its allotment of Title I funds from the State, it may use any or all of the number of bases for allocating funds to its schools: family income; proportion of children whose families receive Aid to Families with Dependent Children; proportion of children receiving free lunches; proportion of unemployed heads of household; housing quality index. Presumably the school districts would use some basis for allocation which would be related to the level of poverty of the school, i.e., its need for compensatory programs. As can be seen in Table 4.6, approximately half (4,663 districts) of the 9,234 school districts reported the use of family income estimates as one basis for allocating Title I funds to the schools. The most frequently used basis for allocation -- used by 6,004 (nearly two-thirds) of the districts -- was number of families receiving welfare (Aid to Families with Dependent Children). "Other bases" for allocation were often used -- 2,442 districts reported using "other bases."

Summary of Expenditures Data

These analyses indicate that the allocation process results in richer school districts having more money to spend per participant in compensatory programs than the poorer school districts. This relationship probably results from the allocation formula which bases Title I funds on the regular per pupil expenditures of the school districts. However,

Table 4.6

Districts classified by regular per pupil expenditure and basis for allocating Title I funds with percentage distribution by total number of districts in expenditure category*

Basis for allocation to schools used by the school district	Regular per pupil expenditure category			
	Less than $425	$425-625	More than $625	Totals
Family income	2,159 66.78	1,862 42.26	642 44.71	4,663
AFDC	1,827 56.51	3,037 68.93	1,140 79.39	6,004
Free lunches	1,520 47.02	1,542 35.00	693 48.26	3,755
Unemployed	501 15.50	503 11.42	261 18.18	1,265
Housing quality	508 15.71	507 11.51	200 13.93	1,215
Other basis	689 21.31	1,390 31.55	363 25.28	2,442
Total number of districts in expenditure cate.	3,233	4,406	1,436	

* Percents do not sum to 100 percent since a district may use more than one basis for allocating funds.

analyses at the level of the pupil suggest that, within the school district, attempts are made to concentrate the funds on the more needy pupils, as will be seen later in this chapter.

Pupil Participation in Compensatory Education

Participation in compensatory education programs is the end result of a complex process of allocation of money, time and effort, and it can be regarded as a resource itself. The efficiency and rationality of the allocation of this resource can be judged by studying what types of pupil in what types of school participate in what types of compensatory program.

During the 1968-69 school year, approximately 68 percent of the pupils in grades two, four and six of Title I elementary schools participated in some academic or ancillary compensatory education program. Assuming this same rate of participation for grades one, three and five, approximately 7,800,000 children in grades one through six were reached by compensatory programs during the 1968-69 school year.

During the summer of 1968, approximately 10 percent--572,708--of the second, fourth and sixth-grade pupils in Title I schools participated in one or more academic programs (primarily math, reading and language) for the disadvantaged. Slightly over 14 percent--818,012--of the same population of pupils participated in one or more summer ancillary programs (e.g., social experiences in the community, programs in nature, arts, science or occupational familiarization). Many of these pupils also participated in some compensatory education program during the 1968-69 school year.

Characteristics Related to Participation

The percentage of pupils participating in any program for the disadvantaged during the 1968-69 school year was unrelated to school district size. The percentage of participants varied less than 1.5 points from

68 percent across the four levels of district size. There was similarly very little variation in the rate of participation across "urbanism of school." Rural schools showed a percentage of pupil participation which was only two or three points below 68 percent and urban schools showed participation rates two or three points above 68 percent. The rate of participation in suburban schools was similarly within two points of 68 percent. Thus, in terms of this rather gross measure of allocation of resources, rates of allocation of participation did not parallel patterns of need across rural, suburban and urban schools. However, as will be seen below, more refined measures of allocation show a pattern more consistent with the principle that participation should be concentrated in areas of greatest need.

The purpose of the following analyses is to determine how widespread participation was in academic programs during the 1968-69 school year and how a pupil's characteristics relate to his participation in programs for the disadvantaged, enrichment programs, or both.

An "academic program for the disadvantaged" is an effort beyond the school program designed to assist pupils who are weak in a particular subject by providing them with additional or alternative instruction. Academic programs conducted during the 1968-69 school year were classified as "disadvantaged programs," "enrichment programs" (i.e., programs designed to give bright students more than the regular curriculum), or "regular programs." Pupils' academic participation was classified in one of four ways: "no participation in special (i.e., disadvantaged or enrichment) programs," "participation in disadvantaged programs," "participation in enrichment programs," and "participation in both disadvantaged and enrichment programs." (This last group is probably made up of pupils who were in remedial classes for one subject but who were above average and doing accelerated work in another subject.)

The numbers and percentages of second, fourth and sixth grade pupils participating in each type of academic program during the 1968-69 school year were as follows:

Table 4.7

Pupils classified by type of participation in academic programs

Type of Participation	Number of Pupils In Grades 2, 4 and 6	Percentage of Pupils In Grades 2, 4 and 6
No participation in special academic programs	4,248,000	74%
Participation in disadvantaged academic programs	1,009,800	18%
Participation in academic enrichment programs	351,700	6%
Participation in both academic, disadvantaged and enrichment programs	124,400	2%

In Table 4.8, a pupil's ethnic-group membership is crosstabulated with his type of participation in special academic programs. Of the 5,734,000 pupils in grades two, four and six, approximately 310,000 Negroes and 590,000 whites participated in special academic programs for the disadvantaged during the 1968-69 school year. White children participated at a slightly lower rate than did members of minority groups. Disadvantaged academic programs included 19 percent of the American Indian pupils, 24 percent of the Negro pupils, 12 percent of the Oriental pupils and 29 percent of the Spanish-surnamed pupils, as compared to 15 percent of the white elementary pupils in Title I schools. These statistics refer to approximately 2,020,000 children in grades one through six of Title I elementary schools who were participants in academic programs for the disadvantaged. Enrichment programs were offered to a smaller number of pupils. Judged against the standard that 6 percent of all children participated in enrichment programs it can be seen in Table 4.8 that Oriental pupils were represented at a rate above 6 percent in enrichment programs and that American Indian and Spanish-surnamed pupils were under-represented in the group of enrichment program participants.

Table 4.8

Pupils classified by ethnic-group and by participation in special academic programs during school year with percentages by row

Ethnic-group of pupil	Pupil participation in special academic programs during regular school year				
	No Partic. in special program	Partic. in disadvantaged program	Partic. in enrichment program	Both disadv. & enrichment programs	Totals
American Indian	16,755 71.74	4,218 18.06	1,022 4.38	1,359 5.82	23,354
Negro	859,175 66.14	311,468 23.98	89,577 6.90	38,894 2.99	1,299,114
Oriental	17,626 75.79	2,692 11.58	2,181 9.38	758 3.26	23,257
Spanish	204,813 63.25	93,521 28.88	15,469 4.78	10,018 3.09	323,821
White	3,099,929 77.51	587,231 14.68	240,435 6.01	72,002 1.80	3,999,597
No Response	49,720 76.70	10,714 16.53	2,990 4.61	1,404 2.17	64,828
Totals	4,248,018	1,009,844	351,674	124,435	5,733,971

The differences in rates of participation of the various ethnic groups in academic programs for the disadvantaged were not large. However, they did parallel the differences in degree of need (established in Chapter III of this report) for compensatory programs among the ethnic groups.

The character of a child's neighborhood is related to his need for compensatory academic programs. In Table 4.9, participation in programs for the academically disadvantaged seems to have a positive relationship with living in an area which is both residential and commercial, hence "urban"; 24 percent of the pupils from this type of neighborhood participated in programs for the academically disadvantaged; only 16 percent of those in residential areas and 18 percent of those in rural areas were in academically disadvantaged classes. The interaction of home location and school program is different for children in enrichment programs. A larger percentage of those in rural areas participated in enrichment programs, though the differences favoring rural participation were quite small. In conclusion, the higher rate of participation of urban (residential _and_ commercial) pupils in academic programs for the disadvantaged is in accord with the observation that the greatest rate of need exists in the urban areas.

Several conclusions may be drawn from Table 4.10 regarding the process of allocating participation in disadvantaged academic programs to those who are economically or educationally disadvantaged. If the first three columns in Table 4.10 are compared to the second three three columns it may be seen that a greater percentage of those who were potential dropouts were in academic programs for the disadvantaged than of those in the same economic level who were not potential dropouts. Thirty-six percent of the poor (yearly family income below $3,000) potential dropouts (level I of disadvantagement) were in programs for the academically disadvantaged. Hence, the majority of the over 300,000 poor potential dropouts in grades two, four and six who were in great need of compensatory schooling did not participate in academic programs for the disadvantaged. About 23 percent of the poor who were not potential dropouts (level IV) were in programs for the academically disadvantaged.

Table 4.9

Pupils classified by urbanism of immediate area of residence and by pupil participation in special academic programs during school year with percentages by row

Urbanism of pupil's immediate area of residence	Pupil participation in special academic programs during regular school year				
	No partic. in special program	Partic. in disadvantaged program	Partic. in enrichment program	Both disadv. & enrichment programs	Totals
Primarily residential	2,591,975 76.22	543,181 15.98	202,736 5.96	62,683 1.84	3,400,575
Residential and commercial	490,783 68.68	171,905 24.05	33,089 4.63	18,854 2.64	714,631
Primarily rural	1,091,198 71.65	280,588 18.43	110,881 7.28	40,216 2.64	1,522,883
Don't know	43,556 73.34	10,009 16.85	3,460 5.83	2,364 3.98	59,389
No Response	30,506 83.59	4,162 11.40	1,511 4.14	316 0.87	36,495
Totals	4,248,018 74.09	1,009,845 17.61	351,677 6.13	124,433 2.17	5,733,973

Table 4.10

Pupils classified by participation in special academic programs during school year and by type of disadvantagement with percentages by columns

Pupil participation in special academic programs during school year	Type of pupil's disadvantagement							
	I	II	III	IV	V	VI	No Response	Totals
No particular special program	184,836 58.17	283,623 58.59	121,478 63.61	281,479 64.79	1,205,788 74.16	2,003,174 81.40	167,642 76.24	4,248,020 74.09
Partic. disadvantagement program	114,755 36.11	175,596 36.27	62,337 32.64	98,537 22.68	280,015 17.22	240,574 9.77	38,031 17.29	1,009,845 17.61
Partic. enrichment program	11,009 3.46	11,330 2.34	4,377 2.29	40,487 9.32	96,421 5.93	178,868 7.27	9,181 4.18	351,673 6.13
Both disadv. & enrichment programs	7,176 2.26	13,536 2.80	2,782 1.46	13,955 3.21	43,648 2.69	38,304 1.56	5,034 2.29	124,435 2.17
Totals	317,776	484,085	190,974	434,458	1,625,872	2,460,920	219,888	5,733,973

Among those who were not designated as potential dropouts, participation in academic programs for the disadvantaged was related to being poor or from a family with below average income. The relationships between type of disadvantagement and participation in enrichment programs is very different. Since enrichment programs were aimed at brighter children, it follows that they were participated in by pupils who were not potential dropouts; this is apparent in Table 4.10. In enrichment programs and the combination of enrichment and disadvantaged programs, those who were poor participated at a slightly higher rate than those who were not poor.

When viewed in terms of a pupil's greater chances of being reached by a compensatory academic program if he is poor or a potential dropout, the data in Table 4.10 reveal an encouraging tendency for participation to be properly allocated. However, when one asks for the percentage of participants in academic disadvantaged programs who are neither poor nor potential dropouts the answers are less encouraging. Approximately 240,000 pupils in grades two, four and six who were neither poor nor potential dropouts participated in academic programs for the disadvantaged. This figure represents about 24 percent of the total 1,010,000 pupils who participated in such programs. Moreover, among the over one million participants in grades two, four and six in academic programs for the disadvantaged during the 1968-69 school year, 280,000 pupils were classified as from a family with below average income (income between $3,000 and $6,000 per year) and not potential dropouts.

In Title I elementary schools, 10 percent of the pupils came from families that were on welfare (AFDC). In Table 4.11 it can be seen that 8 percent of the nonparticipants in disadvantaged academic programs were welfare children, while 16 percent of the participants were pupils receiving AFDC. This difference in rates of participation is consistent with the greater need for compensatory education among pupils on welfare.

Concentration of Participation in Academic Programs at the Pupil Level

A consideration of pupil participation in academic programs for

Table 4.11

Pupils classified by family on welfare and by pupil participation in special academic programs during school year with percents by column

	Pupil participation in special academic programs duringregular school year				
Pupil's family on welfare	No partic. special program	Partic. disadv. program	Partic. enrich. program	Both disadv. & enrich. programs	Totals
No	3903852 91.90	846034 83.78	326426 92.82	107331 86.25	5183643 90.40
Yes	344167 8.10	163811 16.22	25250 7.18	17104 13.75	550333 9.60
Totals	4248019	1009845	351676	124435	5733975

the disadvantaged measured in hours during an academic year permits one to observe the extent of concentration of time allocation to disadvantaged pupils. This is a more refined indicator than is the categorizing of pupils as participants or nonparticipants.

Some pupils participated in more than one academic program for the disadvantaged during the 1968-69 school year. The distribution of multiple participation was as follows:

Number of Academic Programs For the Disadvantaged Participated in During 1968-69 School Year	Number of Pupils In Grades 2, 4 and 6	Percentage of Pupils In Grades 2, 4 and 6
None	4,599,696	80.22
One	672,620	11.73
Two	205,013	3.58
Three or More	256,647	4.48
	5,733,976	

(The total number of participants in one or more programs is 1,134,280, which equals the total number of grade two, four and six pupils in disadvantaged and in disadvantaged and enrichment programs recorded in the previous section of this chapter.)

A striking feature of the above figures is that more pupils participated in three or more academic programs for the disadvantaged than participated in only two such programs. Amont all participants, 23 percent participated in three or more programs. Thus, a significant attempt was made to concentrate program participation, at least in terms of the number of different programs to which a pupil was exposed.

In Title I elementary schools only 12.5 percent of the pupils in grades two, four and six were in academic programs for the disadvantaged which included 100 hours or more of instruction during the school year. If a child was in an academic disadvantaged program of 100 hours duration throughout the year, he attended the program an average of less than three hours per week. The total percentage of participants in academic programs for the disadvantaged was 18 percent; therefore, there was a remaining group of participants in grades two, four and six, constituting approximately one third of the total number of participants, who were given some help but very little--less than 100 hours in during the 1968-69 school year.

In Table 4.12, the number of hours a pupil participated in academic programs for the disadvantaged is further differentiated by his ethnic-group membership. Judged against the standard of the average percentage of participation for each set of time allocation, it is possible to ascertain that members of some minority groups were consistently represented in a certain time category at a greater incidence than the average of all pupils. Spanish-surnamed pupils, Negroes, and American Indians generally had a better than average percentage of participation in programs of 100 hours or more. Hence, some concentration of participation appears to have taken place among those ethnic groups with the greatest need for compensatory programs.

Based on these data, an extensive academic program for the disadvantaged could be described as one in which a pupil attended a special remedial class in math, reading, or language for one hour every school day. This would amount to only about 200 hours in the course of the school year. Only about 6.5 percent of all pupils in Title I elementary schools were in academic programs for the disadvantaged which involved more than 200 hours instruction during the regular school year.

It can be seen in Table 4.13 that potential dropouts had an advantage over potential non-dropouts with respect to number of hours in academic programs for the disadvantaged. Fifteen percent of those who were poor and potential dropouts (level I) were in disadvantaged academic programs from 100 to 199 hours; 11 percent of those who were not poor but potential dropouts (level III) had 100 to 199 hours. This ratio was maintained for potential non-dropouts but the percentages were lower; 8 percent of the poor who were not expected to drop out (level IV) were given 100 to 199 hours in academic disadvantaged programs; only 3 percent of those who were not poor and not potential dropouts (level VI) were in this participant group.

In Table 4.14 it is evident that the percentage of welfare children who received over 100 hours of instruction in 1968-69 school year

Table 4.12

Pupils classified by ethnic-group membership and by total number of hours of pupil participation in all academic programs for the disadvantaged with percents by row

Ethnic-group	Total number of hours of pupil participation in all academic programs for the disadvantaged					
	0-99 hrs.	100-199 hrs.	200-299 hrs.	300-999 hrs.	No Response	Totals
American Indian	20,201 86.56	1,599 6.86	269 1.16	1,231 5.28	53 0.22	23,353
Negro	1,027,217 79.10	112,676 8.68	42,577 3.28	115,556 8.90	1,090 0.08	1,299,116
Oriental	20,710 89.04	806 3.47	555 2.39	1,143 4.91	44 0.19	23,258
Spanish-surnamed	251,650 77.81	36,790 11.33	9,530 2.94	25,592 7.83	259 0.08	323,821
White	3,637,436 90.94	204,636 5.12	50,704 1.27	105,958 2.65	866 0.02	3,999,600
No Response	57,943 89.38	2,749 4.24	621 0.96	3,490 5.38	25 0.04	64,828
Totals	5,015,157	359,256	104,256	252,970	2,337	5,733,976

Table 4.13

Pupils classified by total number of hours of pupil participation in all academic programs for the disadvantaged and by type of disadvantagement with percents by columns

Total number of hours of pupil' participation	Type of pupil's disadvantagement							
	I	II	III	IV	V	VI	No Response	Totals
0-99 hrs.	222,962 70.16	371,184 76.68	156,896 82.16	348,532 80.22	1,409,324 86.68	2,313,317 94.00	192,942 87.75	5,015,157 87.46
100-199 hrs.	46,790 14.72	65,515 13.53	20,451 10.71	32,608 7.51	104,376 6.42	78,198 3.18	11,319 5.15	359,257 6.27
200 hrs. or more	47,568 14.97	47,233 9.76	13,535 7.09	53,102 12.21	111,430 6.85	68,841 2.79	15,517 7.06	357,226 6.24
No Response	455 0.14	153 0.03	93 0.05	217 0.05	744 0.05	567 0.02	108 0.05	2,337 0.04
Totals	317,775	484,085	190,975	434,459	1,625,874	2,460,923	219,886	5,733,977

Table 4.14

Pupils classified by family on welfare and by total number of hours of pupil participation in all academic programs for the disadvantaged with percents by row

Pupil's family on welfare	Total number of hours of pupil participation in all academic programs for the disadvantaged				
	0-99 hrs.	100-199 hrs.	200-999 hrs.	No Response	Totals
No	4,591,991 88.31	296,845 5.85	293,002 5.80	1,803 0.04	5,183,643
Yes	423,165 76.89	62,411 11.34	64,222 11.67	533 0.10	550,333
Totals	5,015,158 87.71	359,256 6.14	357,226 6.10	2,335 0.05	5,733,976

academic programs for the disadvantaged was twice the percentage of non-welfare pupils receiving the same concentration of participation. Over 20 percent of the welfare children in Title I elementary schools were in academic programs for the disadvantaged of 100 hours or more.

The most common subject for compensatory academic instruction was reading. Approximately 18 percent of the pupils in grades two, four and six received reading instruction for the disadvantaged. Among this group of participants, the following distribution of hours of instruction during the 1968-69 school year was observed:

Hours of Instruction in Reading Programs for The Disadvantaged During 1968-69 School Year	Number of Pupils In Grades 2, 4 and 6	Percent of All Pupils
No Hours	4,721,968	82.4%
1- 74 hrs.	239,838	4.2%
75-149 hrs.	485,138	8.4%
150-224 hrs.	211,106	3.7%
225 or more hrs.	75,925	1.3%
	5,733,975	

A slight tendency to concentrate resources at the pupil level is evident in the above figures. Specifically, twice the percentage of participants received 75-149 hours of instruction in reading for the disadvantaged as received 1-74 hours of such instruction.

In Table 4.15, the number of hours of reading instruction for the disadvantaged which pupils received during the 1968-69 school year is crosstabulated with the percentage of pupils in the school reading more than a year below grade level, an obvious measure of need. These data are marred by a high rate of non-response to the corresponding questionnaire items. Nonetheless, for the more than half of the pupils for whom complete data were available, there is observed a clear tendency for the percentage of pupils receiving a high concentration of hours (i.e., above 75 hours) to increase as the percentage of pupils in their school reading more than one year below grade level increases.

Table 4.15

Pupils classified by percent of pupils in school more than one grade level below national norm in reading achievement and by number of hours of pupil participation in reading programs for the disadvantaged with percents by row

Percent of pupils in school more than one grade level below natl. norm in reading	Number of hours of pupil participation in reading programs for the disadvantaged			
	0-74 hrs.	75-149 hrs.	150-750 hrs.	Totals
0-9%	12,893 88.70	845 5.81	797 5.48	14,535
10-19%	418,705 87.03	35,479 7.40	26,674 5.57	480,858
20-29%	658,543 91.86	39,734 5.54	18,595 2.60	716,872
30-39%	524,006 87.93	46,219 7.75	25,698 4.31	595,923
40-49%	450,448 88.14	42,466 8.31	18,139 3.55	511,053
50-59%	302,120 87.73	28,584 8.30	13,695 3.97	344,399
60-69%	219,656 85.06	23,091 8.94	15,483 6.00	258,230
70-79%	185,878 77.28	30,253 12.58	24,403 10.15	240,534
80-89%	149,321 73.69	30,174 15.09	22,445 11.22	201,940
90-100%	172,483 76.12	28,350 12.51	25,758 11.37	226,591
No Response	1,867,755 86.98	179,945 8.52	95,343 4.50	2,143,043
Totals	4,961,808	485,140	287,030	5,733,978

In absolute terms, the concentration of academic instruction on disadvantaged pupils may not have been great. However, in relative terms, not always successful attempts appear to have been made to concentrate such services where they were most needed.

Concentration of Participation in Academic Programs for the Disadvantaged at the School Level

Whether a school chooses to concentrate compensatory programs on those pupils most in need or to apply them to the student body in general is an important decision in the chain of decisions through which resources are allocated. Principals reported both the average daily membership of their elementary schools and an unduplicated count of the number of pupils participating in academic programs for the disadvantaged during the 1968-69 school year. From these data, the percents of pupils in a school participating in academic programs for the disadvantaged were calculated, and the relationship of this index to measures of concentration of need was studied. The rate at which principals reported either incorrect data or no data at all on this question was disappointingly high--approximately 30.5 percent. However, the data which were available were considered so important that they were made the subject of several analyses.

The distribution of the 32,719 Title I elementary schools across categories of "participants in academic programs for the disadvantaged during the 1968-69 school year as a percentage of average daily membership" is as follows:

Participants in Academic Programs for the Disadvantaged During 1968-69 School Year as a Percentage of Average Daily Membership of the School	Number of Title I Elementary Schools	Percent of Total
0- 9%	5,730	17.5%
10-19%	6,997	21.4%
20-29%	3,435	10.5%

(Continued)

30-39%	2,091	6.4%
40-49%	1,035	3.2%
50-59%	553	1.7%
60-69%	446	1.4%
70-79%	172	0.5%
80-89%	156	0.5%
90-100%	2,135	6.5%
No Response	9,969	30.5%
	32,719	

The majority of schools reporting data showed participation below 20 percent, indicating some concentration of resources in compensatory academic programs. It is significant to note, however, that 6.5 percent of the schools (equal to 9.4% of the schools with usable data) had between 90 percent and 100 percent participation. Whether such high rates of participation were justified by need is the concern out of which grew the following crosstabulations of rates of participation and rates of need for compensatory programs.

In Table 4.16, Title I elementary schools are classified with respect to the size (total enrollment) of the school district in which they reside and participants in academic disadvantaged programs as a percent of average daily membership of the school. Although the proportion of schools with 90-100 percent participation is highest for the largest districts (11 percent of the schools in districts with more than 40,000 pupils had 90-100 percent participation), about half of the 2,135 schools with 90-100 percent participation were in districts with less than 3,000 pupils. As can be observed in Table 4.16, the tendency to have nearly all pupils participate in academic programs for the disadvantaged was associated with the largest and smallest school districts as opposed to the two intermediate size categories. Whether these patterns of concentration were justified by need can be answered more defensibly by reference to Tables 4.17 and 4.18, which are discussed below.

Table 4.16

Schools classified by size of district and by participants in academic programs for the disadvantaged during the 1968-69 school year of average daily membership (ADM) with percents by row

Size of district	Participants as percent of ADM											
	0-9%	10-19%	20-29%	30-39%	40-49%	50-59%	60-69%	70-79%	80-80%	90-100%	No Res.	Total
Enrollment above 40,000	371 11.34	429 13.13	304 9.30	187 5.72	100 3.06	129 3.94	74 2.27	56 1.71	49 1.51	362 11.09	1,206 36.93	3,266
9,000-39,999	1,218 18.43	1,160 17.56	743 11.25	427 6.47	238 3.60	179 2.71	46 0.69	23 0.35	60 0.90	291 4.41	2,223 33.64	6,607
3,000-8,999	2,200 21.64	2,122 20.88	1,101 10.82	658 6.47	246 2.42	179 1.76	62 0.61	93 0.91	48 0.47	502 4.94	2,957 29.09	10,167
300-2,999	1,942 15.31	3,286 25.92	1,288 10.16	819 6.46	451 3.56	66 0.52	264 2.08	0 0	0 0	979 7.73	3,583 28.26	12,678
Totals	5,730	6,997	3,435	2,091	1,035	553	446	172	156	2,135	9,969	32,719

Table 4.17

Schools classified by percent of pupils in school more than one grade level below national norm in reading achievement and by public school participants in compensatory program as percent of ADM with percents by row.

Percent at least one year below grade level	Participants as percent of ADM										
	0-9%	10-19%	20-29%	30-39%	40-49%	50-59%	60-69%	70-79%	80-89%	90-100%	No Resp.	Total
0-9%	0 0	51 50.00	0 0	7 6.86	0 0	0 0	0 0	0 0	0 0	0 0	44 43.14	102
10-19%	648 25.71	801 31.79	50 1.98	156 6.19	24 0.95	0 0	0 0	0 0	10 0.40	163 6.47	668 26.51	2,520
20-29%	1,254 27.07	1,209 26.10	357 7.71	202 4.36	90 1.94	7 0.15	12 0.26	26 0.56	2 0.04	217 4.68	1,256 27.11	4,633
30-39%	448 11.76	811 21.28	594 15.59	486 12.75	39 1.02	106 2.78	2 0.05	25 0.66	2 0.05	117 3.07	1,182 31.02	3,811
40-49%	516 17.31	539 18.08	400 13.42	230 7.72	79 2.65	95 3.19	75 2.52	14 0.47	30 1.01	290 9.70	713 23.92	2,981
50-59%	365 19.64	388 20.88	293 15.77	122 6.57	71 3.82	18 0.97	20 1.08	6 0.32	12 0.65	100 5.38	465 25.03	1,858

(Table Continued)

Table 4.17

(Continued)

Percent at least one year below grade level	Participants as percent of ADM											
	0-9%	10-19%	20-29%	30-39%	40-49%	50-59%	60-69%	70-79%	80-89%	90-100%	No Resp.	Total
60-69%	126 8.95	154 10.94	261 18.54	56 3.98	26 1.85	30 2.13	38 2.70	8 0.57	2 0.14	44 3.13	663 47.09	1,408
70-79%	123 9.92	277 22.34	135 10.89	86 6.94	102 8.23	12 9.67	46 3.71	2 0.16	3 0.24	133 10.73	320 25.81	1,240
80-89%	48 4.70	82 8.02	54 5.28	111 10.86	97 9.49	41 4.01	10 0.98	11 1.08	11 1.08	317 31.02	239 23.39	1,022
90-100%	103 9.47	179 16.45	81 7.44	109 10.02	25 2.30	48 4.41	85 7.81	12 1.10	23 2.11	139 12.78	283 26.01	1,088
No Response	2,098 17.40	2,507 20.80	1,210 10.04	525 4.36	481 3.99	195 1.62	158 1.31	69 0.57	62 0.51	613 5.09	4,136 34.31	12,055
Totals	5,729 17.51	6,998 21.39	3,435 10.50	2,090 6.39	1,034 3.16	552 1.69	446 1.36	173 0.53	157 0.48	2,133 6.53	9,969 30.47	32,718

Table 4.18

Schools classified by percent of pupils in school with family on welfare and by public school participants in compensatory program as percent of ADM with percents by rows.

	Participants as Percent of ADM											
% on Welfare	0-9%	10-19%	20-29%	30-39%	40-49%	50-59%	60-69%	70-79%	80-89%	90-100%	No Response	Totals
None	447 29.56	228 15.08	66 4.37	140 9.26	0 0	7 .46	2 .13	0 0	0 0	75 4.96	547 36.18	1512
1-10%	3600 21.33	4303 35.50	1547 9.17	982 .82	461 2.73	116 .69	128 .76	599 .35	26 .15	746 4.42	4905 29.06	16876
11-25%	714 10.45	1511 22.12	743 10.88	521 7.63	234 3.43	200 2.93	162 2.37	33 0.48	25 0.37	556 8.14	2132 31.21	6831
26-50%	313 9.76	368 11.48	514 16.03	252 7.86	100 3.12	165 5.15	119 3.71	19 .59	57 1.78	148 4.62	1149 35.84	3206
Over 50%	99 5.84	194 11.45	152 8.97	88 5.19	47 2.77	56 3.31	31 1.83	56 3.31	36 2.13	414 24.44	523 30.87	1694
No basis for estimation	406 21.21	370 19.33	239 12.49	78 4.08	189 9.87	4 .21	4 .21	4 .21	2 .10	147 7.68	471 24.61	1914
No Response	151 2.20	24 0.35	173 2.52	29 0.42	2 .03	4 .06	0 0	0 0	10 .15	50 .73	242 3.53	686
Total	5730 17.51	6997 21.39	3435 10.50	2091 6.39	1035 3.16	553 1.69	446 1.36	172 0.53	156 0.48	2135 6.53	9969 30.47	32719

In Table 4.17, Title I elementary schools are classified with respect to percent participation in academic programs for the disadvantaged and percent of the student body reading at least one year below grade level. As an example of how this table may be read, note that 1,254 schools reported that 20-29 percent of the pupils were reading more than one year below grade level and 0-9 percent of the student body participated in academic programs for the disadvantaged. It would be gratuitous to assume that the same pupils on whom the incidence of need was estimated in Table 4.17 were those pupils, or a subgroup of those pupils, who participated in the compensatory program. It is conceivable, for example, that the 10 percent of the pupils reading one or more years below grade level were not among the 20 percent of the pupils who participated in compensatory academic programs. Such possibilities were investigated earlier in this chapter when pupil needs were related to pupil participation in compensatory programs.

Perhaps the most important features of Table 4.17 can be observed to the right of the double line which marks the diagnal of the table. Schools lying to the right of this line within any one row reported a greater rate of participation in compensatory academic programs than the rate of pupils reading one or more years below grade level. Since reading one year below grade level is a rather mild form of educational deficit, the measure of need in Table 4.17 can be assumed to overestimate the need for academic programs for the disadvantaged. Hence, the figures to the right of the double line become even more significant since they represent participation in compensatory academic programs at a rate in excess of an overestimate of concentration of need.

Of the 14,831 Title I elementary schools reporting complete data on both rates of participation and rates of pupils reading at least one year below grade level, 2,457 schools reported the former rate to be larger than the latter. That is, approximately 17 percent of all of the schools reporting complete data showed a larger proportion of pupils participating in academic programs for the disadvantaged than the proportion of the student body reading one year or more below grade level.

Hence, these data reflect a substantial amount of "over-participation," in a sense, possibly representing a scattering rather than a concentrating of resources. (It must be noted, however, that to the extent that need for compensatory academic programs is not validly reflected in reading test performance, the above analyses may paint an unfair picture of the misallocation of resources.)

In Table 4.18, Title I elementary schools are classified with respect to percent of the average daily membership receiving welfare (AFDC) and participants in academic programs for the disadvantaged during the 1968-69 school year as a percent of average daily memberships. It is apparent from inspection of the table that, in general, the rate of participation increased as the percent of pupils on welfare increased. Highly detailed analyses of the data are probably not worthwhile since non-response rates were high and, at best, concentration of welfare recipients is a more imperfect measure of educational deficit than is percent more than one year below grade level in reading, which was studied in Table 4.17. It is noteworthy, however, that 1,377 schools (approximately 6 percent of those with usable data) with less than 25 percent of the student body on welfare reported 90-100 percent participation in academic programs for the disadvantaged.

Pupil Participation in Ancillary Programs

In addition to academic programs for the disadvantaged, Title I schools also offered ancillary programs designed to meet special needs for cultural enrichment (e.g., social experiences in the community, programs in nature, arts, science, occupational familiarization), health, pupil personnel service, or food. Such ancillary programs were held both during the summer of 1968 and during the 1968-69 school year.

Approximately 3,761,000 pupils in grades two, four and six--about two-thirds of the total number in these grades--participated in one or more ancillary programs during the 1968 summer or the 1968-69 school year. Thus, nearly two out of every three pupils in Title I elementary schools received some compensatory services. The distribution of pupils by type of service rendered is as follows:

Type of Ancillary Program	Number of Participants In Grades 2, 4 and 6	Participants as a Percent* of Pupils In Grades 2, 4 and 6
Food Program	914,400	16%
Health Program	3,341,000	58%
Personnel Service Program	377,100	7%
Cultural Enrichment Program	1,782,300	31%

Relationship of Participation in Ancillary Programs to Need

In the following tables, the relationship can be studied between pupils' participation in particular types of ancillary program and their teachers' judgment as to whether the pupils have critical needs for the program in question.

In Table 4.19, pupils in grades two, four and six are classified with respect to their participation in food programs (breakfast, lunch, milk or snacks) for the disadvantaged and whether or not in the judgment of their teachers they had a critical need for food programs. In general, participation tended to be allocated to pupils having a critical need for food programs. Approximately two-thirds of the over 370,000 pupils judged to have a critical need for food programs participated in one or more food programs. The rate of participation among pupils not having a critical need was less than 13 percent. However, there was such an overwhelming proportion of pupils not having a critical need that, among all participants in food programs, pupils not having a critical need outnumbered pupils having a critical need by over 2.5 to 1. Presumably the unmet need for food programs remained great; over 112,000 pupils in grades two, four and six were judged to have a critical need for food programs but did not participate in one.

Pupils' need for and participation in health programs are cross-tabulated in Table 4.20. Over 58 percent of the pupils participated in one or more health programs. However, less than 15 percent of the pupils were judged to have a critical need for health programs. There is little

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[*] Percents do not sum to 100 because a pupil could participate in more than one ancillary program.

Table 4.19

Pupils classified by critical need for food programs and by number of food programs in which pupil participated with percents by row

Critical need for food program	Number of food programs in which pupil participated			
	None	One or more	No Response	Totals
No	4,646,770 86.68	659,316 12.30	54,500 1.02	5,360,586
Yes	112,481 30.12	255,091 68.32	5,818 1.56	373,390
Totals	4,759,251 83.00	914,407 15.95	60,318 1.05	5,733,976

Table 4.20

Pupils classified by critical need in heatlh and by pupil participation in health programs with percents by row

Pupil's critical need in health	Pupil participation in health programs			
	No	Yes	No Response	Totals
No	1815204 35.59	2937794 57.60	347075 6.81	5100073
Yes	181684 28.66	403241 63.61	48978 7.73	633903
Totals	1996888 34.83	3341035 58.27	396053 6.91	5733976

evidence that efforts were made consistently to allocate participation in health programs to pupils in greatest need; 58 percent of the pupils not having a critical need and 64 percent of the pupils having a critical need participated in health programs. However, it is possible that some health programs were merely medical examinations, the need for which could only be determined after the examination. (No more refined analyses of participation in health programs were made.)

Pupils' critical needs for psychological or special education services are crosstabulated with participation in personnel services (including psychological and special education services) programs in Table 4.21. In general, pupils having such critical needs were more likely to participate in personnel services programs than pupils not having such needs. However, because of the relatively small incidence of such critical needs, the large majority of pupils who participated in personnel services programs were not judged to have a critical need for either psychological or special education services.

As can be seen in Table 4.22, there were only small differences between the rates of participation in cultural enrichment programs of pupils judged to have and those judged not have a critical need for such programs. The tendency to allocate participation in cultural enrichment programs on the basis of need for such experiences appears not to have been strong. Approximately 820,000 pupils entering grades two, four and six of Title I schools in the fall of 1968--about 14 percent of the total of such pupils--were reported to have participated in one or more cultural enrichment programs during the summer of 1968.

Concentration of Participation in Ancillary Programs at the Pupil Level

One measure of the concentration of ancillary services is the number of different ancillary programs in which pupils participated during the summer of 1968 or the 1968-69 school year. The need for compensatory education is multiple for even a single disadvantaged child. The need for reaching many disadvantaged pupils with multiple ancillary services is clear.

Table 4.21

Pupils classified by critical psychological needs and critical needs in special education and by pupil participation in personnel service programs with percents by row

Critical psychological needs and critical needs in special education		Pupil participation in personnel service programs			
		No	Yes	No Response	Totals
No	Psychological Needs	4,755,077 91.61	230,116 4.43	204,935 3.96	5,190,128
	Special Education Needs	4,887,202 90.07	328,620 6.05	211,130 3.88	5,426,952
Yes	Psychological Needs	379,498 69.78	146,963 27.02	17,387 3.20	543,848
	Special Education Needs	247,374 80.57	48,459 15.80	11,192 3.64	307,025
Totals	Psychological Needs	5,134,576 89.52	377,079 6.59	222,321 3.88	5,733,976
	Special Education Needs	5,134,576 89.52	377,079 6.59	222,321 3.88	5,733,976

Table 4.22

Pupils classified by critical need for cultural program and by number of cultural enrichment programs in which pupil participated with percentages by row

Pupil's critical need for cultural program	Number of cultural enrichment programs in which pupil participated					
	None	One	Two	Three or more	No Response	Totals
No	2,660,860 63.55	582,172 13.90	289,154 6.91	287,989 6.88	367,056 8.77	4,187,233
Yes	807,207 52.19	273,684 17.69	161,857 10.46	187,489 12.12	116,505 7.53	1,546,743
Totals	3,468,068 60.48	855,858 14.93	451,011 7.87	475,478 8.29	483,561 8.43	5,733,976

The distribution of pupils in grades two, four and six in Title I schools by the number of ancillary programs participated in during the summer of 1968 and the 1968-69 school year is as follows:

Number of Ancillary Programs Participated in During Summer 1968 and/or 1968-69 School Year	Number of Pupils In Grades 2, 4 and 6	Percent of Total
None	1,062,801	18.5%
One	1,893,424	33.0%
Two	857,002	15.0%
Three	466,593	8.1%
Four	279,210	4.9%
Five	140,546	2.5%
Six	78,460	1.4%
Seven or More	46,115	0.7%
No Response	909,825	15.9%
	5,733,976	

Nearly half of all participants in ancillary programs were reached through more than one program. Although a slight majority of participants too, part in a single program, the data on multiple participation reveal a substantial amount of concentration of ancillary services.

It is important to determine whether ancillary services were concentrated where need was greatest. Toward this end, measures of need were crosstabulated with the numbers of ancillary programs in which pupils participated. In Table 4.23, all pupils in grades two, four and six are classified with respect to ethnic-group membership and number of ancillary programs participated in during the summer of 1968 and the 1968-69 school year. In general, the data in Table 4.23 reveal that multiple participation in ancillary programs occurred at a higher rate among Negro and Spanish-surnamed pupils than among white or Oriental pupils. Since the need for such programs is greater among the two former minority groups, the data support the conclusion that there was a tendency to concentrate ancillary services where the need was greatest.

Table 4.23

Pupils classified by ethnic-group membership and by total number of ancillary programs in which pupil participates with percents by row

Ethnic-group of pupil	Total number of ancillary programs in which pupil participates						
	None	One	Two	Three	Four or more	No Response	Totals
American Indian	2,812 12.04	6,723 28.79	4,162 17.82	976 4.18	2,954 12.64	5,727 24.52	23,354
Negro	177,795 13.69	335,099 25.80	236,771 18.23	147,856 11.38	176,138 13.55	225,455 17.35	1,299,114
Oriental	3,709 15.95	8,209 35.29	3,364 14.46	1,442 6.20	3,239 13.93	3,295 14.17	23,258
Spanish	45,245 13.97	85,447 26.39	52,357 16.17	34,988 10.80	42,090 13.00	63,694 19.67	323,821
White	825,933 20.65	1,438,182 35.96	553,151 13.83	278,017 6.95	15,822 7.90	588,495 14.71	3,999,600
No Response	7,307 11.27	19,764 30.49	7,197 11.10	3,314 5.11	4,088 6.31	23,159 35.72	64,829
Totals	1,062,801 18.53	1,893,424 33.02	857,002 14.95	466,593 8.14	544,331 9.49	909,825 15.87	5,733,976

The above conclusion is further supported by the data in Table 4.24 on the relationship between the number of ancillary programs participated in and the pupil's type of disadvantagement. While substantiating the fact of a tendency toward proper allocation, the data in Table 4.24 underline the consistently recurring finding that participation is allocated to a large number of pupils who presumably have little need for it. For example, well over 1,500,000 pupils in grades two, four and six--over 25 percent of the total of all pupils in those grades--participated in one or more ancillary programs, but were judged to be neither potential dropouts nor poor (family income was over $6,000 per year).--level VI.

In Table 4.25, pupils are cross-classified with respect to the number of ancillary programs in which they participated and whether or not they come from a family receiving AFDC. There was a greater than even chance that a pupil not on welfare would participate in none or only one ancillary program during the summer of 1968 or the 1968-69 school year. For pupils on welfare, the chances were nearly three in four that they would participate in one or more ancillary programs. Thus, a relatively strong relationship between concentration of ancillary services and welfare status was observed. However, there is room for improved allocation among the vast numbers of participants in several ancillary programs who were not on welfare and among the nearly 45,000 pupils in grades two, four and six (less than 10 percent of the total of all pupils) who were receiving welfare but participated in no ancillary programs.

In Table 4.26, pupils are classified by number of ancillary programs participated in and urbanism of the school attended. In general, ancillary services were concentrated where need was greatest, namely in the urban and rural schools. It is interesting to note that although the need for compensatory programs is about equally great in the urban and the rural schools (see Chapter III of this report); the pattern of concentration of ancillary services in rural schools more clearly resembles the pattern in suburban schools--where the need is much less--than it does the pattern in urban schools. Thus, rural schools may not be able to concentrate ancillary services as efficiently as urban schools even though the need is about equal in both locales.

Table 4.24

Pupils classified by total number of ancillary programs in which pupil participates

and by type of disadvantagement with percentages by columns

	Type of pupil's disadvantagement							
Total number of ancillary programs in which pupil participates	I	II	III	IV	V	VI	No Response	Totals
None	32,868 10.35	77,486 16.01	31,830 16.67	57,496 13.23	326,760 20.10	499,150 20.28	37,214 16.92	1062804 18.54
One	66,088 20.80	143,637 29.67	70,532 36.93	95,028 21.87	504,766 31.05	951,979 38.68	61,393 27.92	1893423 33.02
Two	67,808 21.34	80,993 16.73	31,306 16.39	86,275 19.86	227,306 13.98	337,660 13.72	25,654 11.67	857002 14.95
Three	41,089 12.93	44,331 9.16	13,798 7.23	53,926 12.41	140,107 9.62	160,482 6.52	12,859 5.85	466592 8.14
Four or more	44,216 13.90	52,342 10.85	13,080 6.86	66,674 15.35	165,063 10.14	185,273 7.52	17,683 8.03	544,332 9.50
No Response	65,708 20.68	85,295 17.62	30,428 15.93	75,060 17.28	261,871 16.11	326,379 13.26	65,084 29.60	909825 15.87
Totals	317,777	484,085	190,974	434,459	1,625,873	2,460,923	219,887	5733978

Table 4.25

Pupils classified by family on welfare and by total number of ancillary programs in which pupil participates with percents by row

Pupil's family on welfare	Total number of ancillary programs in which pupil participates						
	None	One	Two	Three	Four or More	No Response	Totals
No	1018280 19.65	1776222 34.27	740431 14.28	391080 7.55	460383 8.88	797247 15.38	5,183,643
Yes	44522 8.09	117200 21.30	116572 21.18	75512 13.72	83945 15.25	112577 20.46	550,328
Totals	1062802 18.53	1893422 33.02	857003 14.95	466592 8.14	544328 9.49	909824 15.87	5,733,971

Table 4.26

Pupils classified by urbanism of school and by total number of ancillary programs in which pupil participates with percents by row

Urbanism of school	Total number of ancillary programs in which pupil participates						
	None	One	Two	Three	Four or more	No Response	Totals
Generally rural	586,981 20.58	943,642 33.08	428,924 15.04	212,337 7.44	217,266 7.62	463,171 16.24	2,852,322
Suburban	224,096 18.14	458,376 37.11	172,455 13.96	92,770 7.51	114,520 9.27	172,821 13.99	1,235,038
Urban	189,813 14.74	354,620 27.54	213,583 16.59	136,962 10.64	175,185 13.61	217,471 16.89	1,287,634
No Response	61,911 17.25	136,785 38.10	42,039 11.71	24,524 6.83	37,357 10.41	56,358 15.70	358,974
Totals	1,062,801 18.54	1,893,423 33.02	857,001 14.95	466,593 8.14	544,329 9.49	909,821 15.87	5,733,968

Are Compensatory Programs Improvements or Expansions of Regular Programs?

The fundamental purpose of Title I of the Elementary and Secondary Education Act of 1965 was to allocate money to local educational agencies for the improvement and expansion of programs for socially and educationally disadvantaged pupils. In evaluating the effectiveness of the allocation process, then, if becomes important to inquire whether programs offered in the name of compensatory schooling for the disadvantaged were genuine improvements or expansions of regular school programs. A partial answer to that question is the subject of this section.

Classroom Organization

One of the more obvious ways in which instruction can vary is with respect to the grouping of pupils; instruction can be individualized or undifferentiated for one large group, with all manner of gradations between these two extremes. In the three following analyses, participants and nonparticipants in academic programs for the disadvantaged are compared with respect to the grouping of their class for instruction in reading, math and language.

In Table 4.27, pupils in grades two, four and six in Title I elementary schools are classified with regard to their participation in academic programs (no special program, disadvantaged program, enrichment program, or both disadvantaged and enrichment program) during the 1968-69 school year and with regard to the grouping of their class for reading instruction. As can be seen, nearly equal proportions of participants and nonparticipants in disadvantaged programs received reading instruction in classes taught as one group: 13 percent of nonparticipants versus 11 percent of participants in disadvantaged programs. The percentage of participants which were taught as two groups within a classroom is the same (21 percent) for each category. Most noteworthy in Table 4.27 is the fact that 9.23 percent of the participants in compensatory academic programs received individualized reading instruction, while instruction in reading was individualized for only 5.81 percent of the nonparticipants. Thus, a slight tendency was observed to individualize reading instruction for the disadvantaged at a somewhat greater rate than for nonparticipants. Interestingly, about equal percentage of the pupils participating

Table 4.27

Pupils classified by classroom grouping in reading and by pupil participation in special academic programs during the 1968-69 school year with percentages by column

Classroom grouping	Pupil participation on special academic programs during regular school year				
	No partc. in special program	Partic. in disadv. program	Partic. in enrichment program	Both disadv. & enrichment programs	Totals
One group	552,922 13.02	110,660 10.96	51,404 14.62	18,750 15.07	733,734 3.89
Two groups	901,646 21.23	216,067 21.40	79,271 22.54	25,993 20.89	1,222,977 11.78
Three or more groups	1,592,720 37.49	360,442 35.69	122,296 34.78	35,606 28.61	2,111,065 49.87
Individualized	246,723 5.81	93,190 9.23	30,446 8.66	21,213 17.05	391,570 7.07
No Response	954,009 22.46	229,485 22.72	68,259 19.41	22,872 18.38	1,274,625 27.39
Totals	4,248,021	1,009,844	351,677	124,435	5,733,976

in academic enrichment programs and in disadvantaged programs received individualized reading instruction: 8.66 percent versus 9.23 percent. In conclusion, although evidence exists that reading programs for the disadvantaged were slightly more individualized than for regular pupils, the rate of individualization of reading instruction for the disadvantaged was not greater than the rate for pupils in enrichment programs. Thus, Title I funds appear to have created slightly more individualized reading instruction for the disadvantaged, but not at a rate exceeding the normal rate of individualization for bright pupils.

In Tables 4.28 and 4.29, similar analyses are presented for classroom grouping in math and language instruction. In both subjects the preponderance of instruction took place in one group within the classroom and no important differences in grouping between nonparticipants and participants in either disadvantaged or enrichment academic programs were observed.

An explanation of the generally reduced reading-class size for the disadvantaged and a further description of how Title I funds "improved and expanded" school programs for the disadvantaged can be seen in data on the types of assistance provided for teachers in Title I elementary schools. As can be seen clearly in Table 4.30, Title I funds were frequently used to provide teachers with classroom aides and consultants. Support for tuition for further schooling for the teacher or to defray the expenses of travel in connection with the teacher's assignment was more likely to have come from non-Title I sources. It would appear, then, that a primary mechanism for reducing class size in reading programs for the disadvantaged was support of a classroom aide with Title I funds. In data not reported in detail here, 55 percent of the 16,492 teachers whose general assignment was to teach an academic class for the disadvantaged reported that they were assisted by aides in clerical or teaching duties; only 35 percent of the 188,266 teachers assigned to a "regular" classroom (which may have contained some pupils receiving compensatory schooling) reported similar assistance. These two groups of teachers--grouped by general assignment--did not differ in any important respects in the rate at which their classes were team taught,

Table 4.28

Pupils classified by classroom grouping in math and by pupil participation in special academic programs during the 1968-69 school year with percentages by column

Classroom grouping	Pupil participation in special academic program during regular school year				
	No partic. in special program	Partic. in disadv. program	Partic. in enrichment program	Both disad. & enrichment programs	Totals
One group	2,216,310 52.17	457,969 45.35	163,593 46.52	54,235 43.59	2,892,103 58.69
Two groups	1,068,848 25.16	283,746 28.10	102,079 29.03	31,497 25.31	1,486,170 23.93
Three or more groups	388,451 9.14	102,039 10.10	38,348 10.90	10,835 8.71	539,672 6.54
Individualized	167,117 3.93	35,664 3.53	12,185 3.46	17,185 13.31	232,151 4.64
No Response	407,294 9.59	130,427 12.92	35,471 10.09	10,682 8.58	583,876 6.20
Totals	4,248,021	1,009,844	351,677	124,435	5,733,976

Table 4.29

Pupils classified by classroom grouping in language and by pupil participation in special academic programs during the 1968-school year with percentages by column

Classroom grouping	Pupil participation in special academic programs during regular school year				
	No partic. in special program	Partic. in disadv. program	Partic. in enrichment program	Both disad. & enrichment programs	Totals
One group	328,911 77.40	724,589 72.74	251,482 71.51	82,074 65.96	4,346,055 75.79
Two groups	361,711 8.51	111,156 11.00	34,413 9.79	12,332 9.91	519,612 9.06
Three or more groups	152,691 3.59	39,060 3.87	18,871 5.37	4,693 3.77	215,315 3.76
Individualized	67,277 1.58	19,750 1.96	9,890 2.81	15,929 12.80	112,845 1.97
No Response	378,430 8.91	115,291 11.42	37,019 10.53	9,406 7.56	540,146 9.42
Totals	4,248,021	1,009,844	351,677	124,435	5,733,976

Table 4.30

Teachers classified by type of assistance provided and source of support for the assistance with percents by total number of teachers*

Type of Assistance	Source of support				
	Not Provided	Provided by Title I funds	Provided by other funds	Provided but source of funds not known	Total No. of teachers
Classroom aides	117,215 54.27	59,656 27.62	16,996 7.87	16,006 7.41	215,995
Consultants	37,514 17.37	136,570 63.23	54,804 25.37	42,958 19.89	215,995
Tuition fees	153,071 70.87	8,337 3.86	13,737 6.36	11,989 5.55	215,995
Travel expenses	162,011 75.01	4,360 2.02	12,903 5.97	8,160 3.78	215,995

* Percents may sum to more than 100 if teachers received multiple assistance of a given type support from more than one source. Percents sum to less than 100 when teachers indicated a certain type of assistance was given but indicated nothing regarding the source of support.

or their teaching was "departmentalized" (the teacher teaches the same subject to several classes each day), or in the rate at which they were assisted by one or more specialists in music, reading, physical education, etc.

Thus, the primary organizational difference between the regular and the compensatory instruction which the schools offered appears to have been a slight reduction in the adult/pupil ratio during reading instruction, attributable to the use of teacher aides.

Teaching Experience and General Assignment

The nature of the instruction offered a child may be related to the experience of his teacher, though research on this question has failed to turn up any very substantial findings. Even though the precise benefits of having more experienced teachers may not be known, the relationship of teachers' years experience and general teaching assignment can be studied as in Table 4.31. In the table, teachers are classified with respect to years of teaching experience and whether their general teaching assignment is to a regular program of an academic program for the disadvantaged or an academic enrichment program. ("General teaching assignment" is a characterization of the teacher's class during the bulk of the day; teachers of "regular programs" may still have several pupils who participate in compensatory academic programs.)

From Table 4.31 it can be determined that 34 percent of the teachers with "regular program" general assignments had less than six years teaching experience. Slightly over 39 percent of teachers with an "academic disadvantaged program" general assignment had comparable experience, i.e., less than six years. The relationship slightly "favors" regular programs. The proportion of teachers with "academic enrichment" general assignments who had less than six years teaching experience (23 percent) was substantially less than for the other two assignments. At the other end of the continuum of teaching experience, one finds a significantly higher rate of experienced teachers (more than 20 years experience) with enrichment general assignments than with regular or disadvantaged class assignments. A very slight "favoring" of the very experienced

Table 4.31

Teachers classified by years of experience and by general teaching assignment with percents by column

Years of teaching experience	General teaching assignment				
	Regular Program	Academ. Disadv.	Academic Enrichment	No Response	Totals
1 year or less	17,499 9.29	2,042 12,38	208 5.91	344 4.46	20,094
Greater than 1 year less than 3 years	16,374 8.70	1,556 9.44	162 4.60	367 4.75	18,458 8.55
More than 3 yrs. less than 6 years	30,600 16.25	2,897 17.57	446 12.68	1,070 13.85	35,013 16.21
More than 6 yrs. less than 10 years	26,301 13.97	2,290 13.88	410 11.67	716 9.27	29,717 13.76
More than 10 yrs. less than 20 years	46,570 24.74	3,851 23,36	977 28.36	1,908 24.71	53,326 24.69
20 yrs. or more	50,339 26.74	3,764 22.82	1,286 36.56	3,095 40.09	58,485 27.08
No Response	583 0.31	91 0.55	8 0.23	221 2.86	903 0.42
Totals	188,266	16,492	3,517	7,720	215,995

teachers in regular assignments as opposed to disadvantaged assignments can also be observed in Table 4.31. A policy can be seen of tending to assign the teachers with less experience to disadvantaged programs and the teachers with more experience to enrichment programs.

Curriculum Approaches

Teachers were asked to record which of five approaches they used most often in presenting material and information to their classes. The five approaches were as follows:

- Topic centered - (e.g., a specific reading lesson on Mars);
- Subject-matter centered - (e.g., emphasis placed directly on a subject such as English);
- Unit centered - (e.g., all reading activities over a period of time could center on the solar system);
- Skills centered - (e.g., multiplying two-digit numbers);
- Activity centered - (e.g., reading activities centered around a trip to the zoo).

One predominant curriculum approach was chosen by each teacher to describe his teaching in each of the three areas of math, reading and language. In addition, the teachers were classified as having general teaching assignments of either regular program, disadvantaged program or enrichment program. By comparing the curriculum approaches used by teachers with the three types of program, further evidence may be obtained on whether compensatory academic programs were expansions or improvements of regular school programs.

The results of the above analyses are presented in Figure 4.1 where the rates of usage of the five different curriculum approaches are depicted separately for teachers of regular, disadvantaged and enrichment programs in the areas of math, reading and language. As an example of how Figure 4.1 is interpreted, note that 31 percent of the 188,266 teachers whose general assignment was to a regular class used a subject-matter centered approach to teach reading, while 23 percent of the 16,492 teachers assigned to disadvantaged programs used the same approach (subject-matter centered) in reading. In comparing regular and disad-

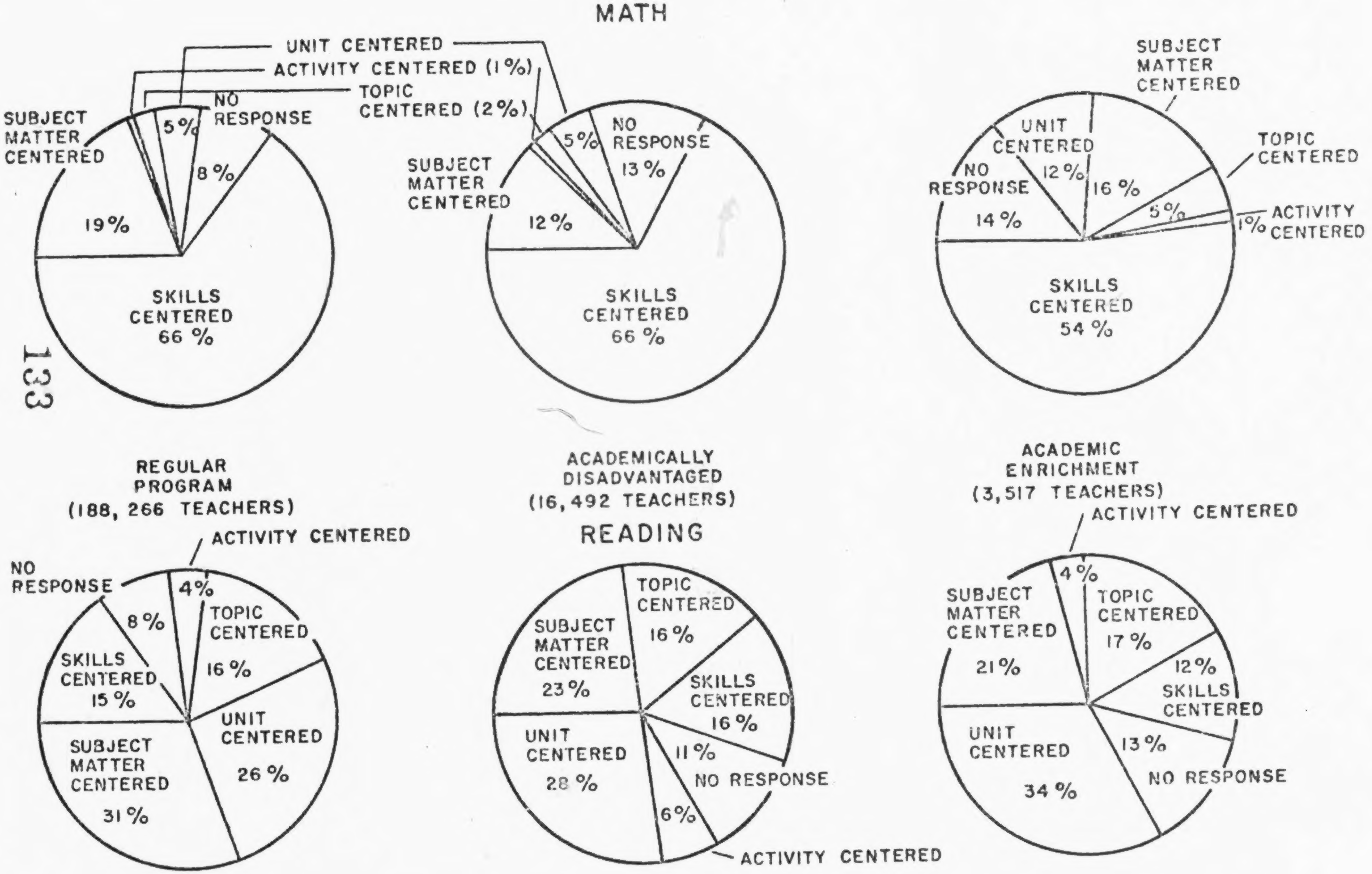

Figure 4.1. Teachers classified by general teaching assignment and curriculum emphasis in math, reading and language classes. (Percents are by number of teachers in each general assignment.)

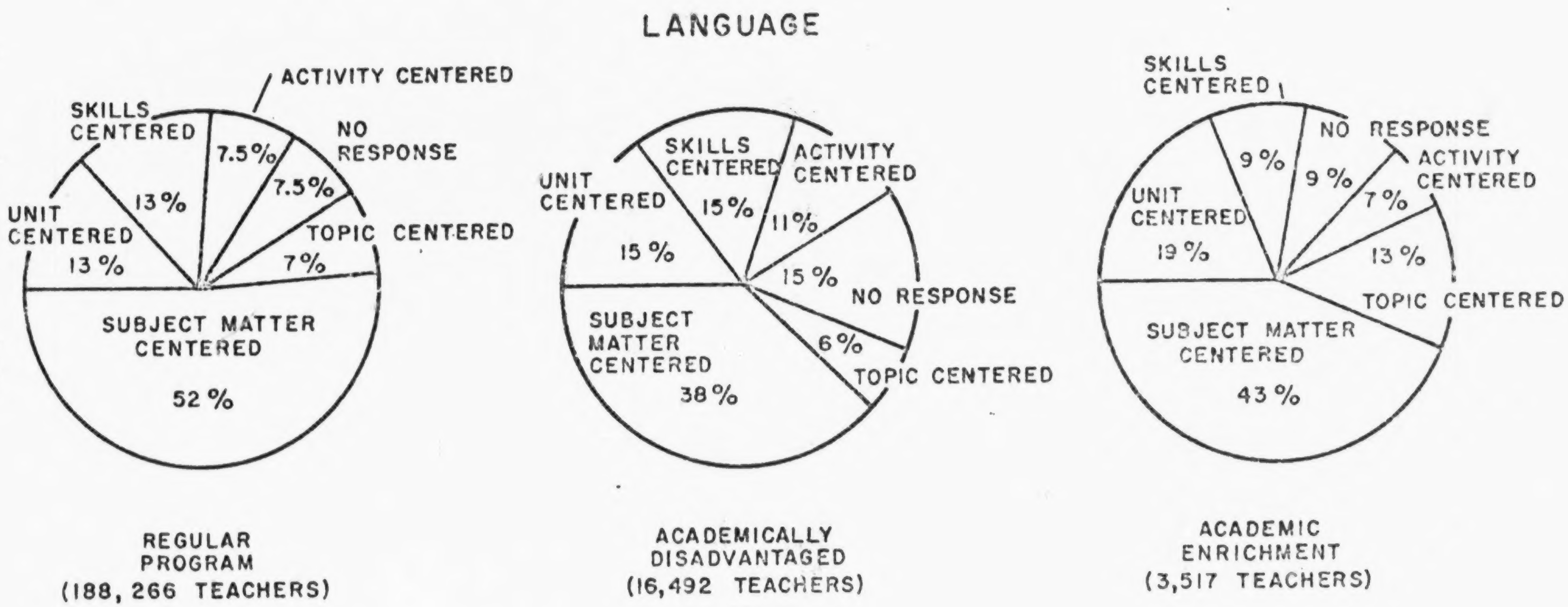

Figure 4.1. (Con't) Teachers classified by general teaching assignment and curriculum emphasis in math, reading and language classes. (Percents are by number of teachers in each general assignment.)

vantaged reading programs in this manner, one finds that the above mentioned difference is the most noteworthy of all: regular reading programs tended to be subject-mattered centered at a slightly higher rate (31 percent versus 23 percent) than did disadvantaged reading programs. The shift away from a subject-matter emphasis in the disadvantaged programs appears not to have resulted in an increased emphasis on any one approach, but rather in small increments in the emphasis given to each of the four approaches.

The comparison of regular and disadvantaged language programs in Figure 4.1 reveals a large difference in the rate of use of the subject-matter centered approach; this approach was used by 52 percent of the teachers who had a "regular program" general assignment but by only 38 percent of the teachers assigned to disadvantaged language programs. Teachers in disadvantaged programs may have turned to the activities centered approach when they chose not to use the subject-matter centered approach in language instruction; however, the evidence for such a conclusion is at best weak and the difference between regular and disadvantaged programs in the rates of use of this latter approach is small (7.5 percent versus 11 percent.)

No striking differences between curriculum approaches in regular and disadvantaged math programs were observed. Although the subject-matter centered approach was employed at a somewhat lesser rate in disadvantaged programs than in regular programs (12 percent versus 19 percent), the larger nonresponse rate to the questionnaire item among teachers with general assignments to disadvantaged programs makes the finding equivocal.

In summary, some evidence exists that teachers with general assignments to academic programs for the disadvantaged tended to use the subject-matter centered curriculum approach to instruction at a somewhat lesser rate than teachers assigned to regular programs. However, the differences in curriculum approach between these two groups of teachers were not striking.

Instructional Emphasis in Reading

Teachers were asked to report, for each sampled pupil in their class who participated in a reading program for the disadvantaged, the emphasis given to reading instruction. The teachers were directed to select from the following list not more than three emphases which predominated in the reading instruction of participants in disadvantaged programs: 1) phonetic analysis, 2) structural analysis, 3) context clues, 4) vocabulary, 5) oral reading, 6) comprehension skills, 7) work-study skills, 8) literary interpretation, 9) critical reading, 10) creative reading. From these data, participants in reading programs for the disadvantaged were classified by the number of hours of reading instruction received during the 1968-69 school year and the emphases given to the reading instruction. The results of the crosstabulation appear in Table 4.32.

In Table 4.32, the relationship between the concentration of reading instruction for the disadvantaged and curriculum emphases can be studied in an attempt to discern whether intensive compensatory reading programs differed from less intensive ones. There are few consistent patterns of changing curriculum emphasis relative to intensity of the reading program for the disadvantaged.

Perhaps the more telling comparison would be between participants in disadvantaged and regular reading classes. Unfortunately, curriculum emphases were not reported for pupils in regular reading programs. Data were available from teachers, however, on the typical curriculum emphasis given to reading in their class. (It would be unwarranted to assume that because a teacher reported a particular curriculum emphasis in general, the same emphasis guided instruction with all pupils in the class. Reading instruction was differentiated by ability group and individualized at a fairly high rate.) When the responses of the teachers who reported a general assignment to regular programs were tabulated, the following rates of use of curriculum emphasis in reading were observed.

Table 4.32

Pupils classified by curriculum emphases in reading programs for the academically disadvantaged and by number of hours participation in reading programs for the disadvantaged with percents by total number of pupils in each "hours participation" category

Context most emphasized	Number of hours participation in reading programs for the disadvantaged			
	1-74 Hours	75-149 Hours	150-224 Hours	More than 225 hours
Phonetic analysis	177,432 73.98	338,219 69.72	119,043 56.39	54,011 71.14
Structural analysis	107,351 44.76	187,109 38.57	84,004 39.79	31,115 40.98
Context clues	109,222 45.54	190,079 39.18	70,177 33.24	31,471 41.45
Vocabulary	150,019 62.55	274,018 56.48	113,410 53.72	41,154 54.20
Oral reading	91,114 37.99	144,647 29.82	61,767 29.26	20,232 26.65
Comprehension skills	146,757 61.19	281,636 58.05	118,322 56.05	45,553 60.00
Work-study skills	95,192 39.69	156,298 32.22	66,750 31.62	27,536 36.27
Literary interpretation	32,162 13.41	39,455 8.13	14,046 6.65	8,622 1.36
Critical reading	34,249 14.28	50,661 10.44	23,545 11.15	5,876 7.74
Creative reading	38,710 16.14	54,182 11.17	24,407 11.56	16,756 22.07
Total number of pupils in "hours" category	239,838	485,138	211,106	75,925

Curriculum Emphasis in Reading Instruction	Percent of Times Emphasis was Used by Teachers with "Regular Program" General Assignment
Phonetic Analysis	59%
Structural Analysis	32%
Context Clues	38%
Vocabulary	49%
Oral Reading	24%
Comprehension Skills	50%
Work-study Skills	14%
Literary Interpretation	6%
Critical Reading	9%
Creative Reading	11%

The most noteworthy difference between curriculum emphases in regular and disadvantaged reading programs appears to be that the acquisition of reading vocabulary was emphasized at a greater rate in programs for the disadvantaged than in regular programs--an increased emphasis in keeping with the needs of the disadvantaged pupils. In addition, work-study skills were emphasized twice as often in disadvantaged reading programs as in regular reading programs. However, as with curriculum approaches, the general pattern of curriculum emphases in reading differed little between regular and disadvantaged programs.

Attendant Activities

Several activities attendant upon compensatory education programs are aimed at supporting and facilitating schooling for the disadvantaged. Two such attendant activities are reported on in this chapter: Title I ESEA Citizens' Advisory Committees and teacher training.

In-Service Training of Teachers

Title I funds are used by some school districts to support in-service training in the teaching of academically disadvantaged pupils. The amount and its process of allocation of such training was the subject of several data analyses.

In Table 4.33, school districts are crosstabulated by size and by the percentage of their total allotment of Title I funds spent on in-service teaching training either during the summer of 1968 or the 1968-69 school year. It is estimated that over approximately half of the school districts expended no funds for teacher training.* Only 7.5 percent of the school districts expended more than 4 percent of their total Title I allocation for in-service teacher training. Large districts were more likely than small districts to expend a greater proportion of their funds for teacher training.

Approximately 45 percent of the school districts (amounting to nearly all of the districts giving teacher training) reported having given in-service training to teachers on reaching instruction. Nearly 22 percent of the districts gave in-service training in language instruction; 14 percent, equal to less than a third of the school districts offering in-service training, provided in-service training in math instruction.

Hours of participation in in-service training by teachers in 1968-69 were crossed with teacher, class, pupil and district characteristics. Only 27 percent of the teachers participated at all in in-service training in 1968-69; 10 percent participated from 1-4 hours; 11 percent participated from 5-20 hours; and 7 percent participated in more than 20 hours of in-service training for teaching the disadvantaged during 1968-69. Participation in in-service teacher training was observed to be related to district size: the larger the district, the greater the rate of participation (see Table 4.34).

A slight decrease in hours of participation as grade level of teacher increased was observed. Over two-thirds of all teachers had no in-service training during 1968-69 and only 20 percent had over 4 hours. The percent of teachers of disadvantaged classes with 20 or more hours of training was more than twice the percent of teachers of regular classes with similar training. The teachers with the most in-service training in 1968-69 were those whose teaching experience exceeded one year. Teachers new to their present school, but who had 1-3 years of teaching

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*The data are ambiguous on this point. Expenditures were reported on the school district in such a manner that often a nonresponse could not be distinguished from a zero expenditure. Approximately 43 percent of the 8,236 school districts left the teacher training expenditure item blank.

Table 4.33

Districts classified by funds for in-service training as percentage of total Title I funds and by size of district, with percents by column

Funds for in-service training as percent of total Title I funds	District size				
	Above 40,000 Enrollment	40,000-9,000	8,999-3,000	2,999-300	Totals
0-4%	75 81.32	600 91.12	1,679 87.60	6,183 94.12	8,536 92.53
5-9%	13 14.29	27 4.03	158 8.26	193 2.94	391 4.24
10-14%	4 4.40	21 3.23	63 3.31	64 0.98	153 1.66
15-19%	0 0	5 0.81	16 0.83	64 0.98	86 0.93
20% or more	0 0	5 0.81	0 0	64 0.98	69 0.76
Totals	92	658	1,917	6,569	9.236

Table 4.34

Teachers classified by size of district and teachers amount of training in 1968-69 for teaching academically disadvantaged with percents by row

Size of district	Amount of training in 1968-69 for teaching academically disadvantaged					
	None	1-4 hours	5-20 hours	More than 20 hours	No Response	Totals
Enrollment above 40,000	17,515 54.02	3,834 11.82	5,780 17.83	4,602 14.19	691 2.13	32,421
9,000-40,000	34,651 70.63	4,491 9.15	5,345 10.90	3,549 7.23	1,021 2.08	49,056
3,000-8,999	46,897 73.63	6,203 9.74	5,514 8.66	3,206 5.03	1,871 2.94	63,690
300-2,999	50,785 71.70	6,867 9.70	7,039 9.94	2,829 3.99	3,308 4.67	70,828
Totals	149,847	21,394	23,678	14,185	6,891	215,995

experience, participated the least; perhaps the experienced teachers who were more settled in their position had more time than new teachers to enroll in in-service courses and feel a greater need to do so.

An inspection of in-service training hours crosstabulated with minority-group concentration in the classroom revealed that as minority-group concentration increased the percent of teachers without in-service training decreased greatly. For instance, in classes with high percents of Negroes, as many as 41 percent of the teachers had five or more hours of in-service training; 75 percent of classes with no Negroes had teachers with no in-service training. Similar trends were visible when the concentrations of pupils on welfare and pupils below grade level in reading were examined (see Table 4.35).

Results indicate that over three-fourths of all Title I pupils were taught by teachers having no or only minimal (4 hours or less) in-service training. There was also no indication of a strong or consistent relationship between a pupil's level of disadvantagement (measured in various ways) and the chances that his teacher received in-service training during 1968-69 for teaching the academically disadvantaged. However, there is evidence that minority-group pupils (with the exception of American Indians) were more likely to have teachers receiving in-service training in 1968-69 than are white pupils.

Community Participation in Compensatory Programs

Community participation is one of the stated goals of Title I, ESEA programs. It was specified that an integral feature of each Title I project should be the involvement of parents of Title I children in the educational process. In this section community involvement and participation in Title I, ESEA programs are examined.

A basic criterion for the Title I grant applications, as established by the Commissioner of Education, requires that "The Title I program includes appropriate activities or services in which parents will be involved." The guideline further requires that:

> The applicant should demonstrate that adequate provision has been made in the Title I program for the participation of and

Table 4.35

Teachers classified by percent of class members who are below grade level in reading and amount of training in 1968-69 for teaching academically disadvantaged with percents by rows

Percent of class below grade level	Amount of training in 1968-69 for teaching academically disadvantaged					
	None	1-4 hours	5-20 hours	More than 20 hours	No Response	Totals
None	5,780 69.44	784 9.42	962 11.55	529 6.36	270 3.24	8.324
1-10	37,096 72.63	4,132 8.09	4,988 9.77	2,802 5.49	2,057 4.03	51,076
11-25	45,335 74.08	5,622 9.19	6,258 10.23	2,580 4.22	1,398 2.28	61,193
26-50	34,099 69.94	5,453 11.18	4,337 8.90	3,550 7.28	1,314 2.69	48,752
51-75	13,206 61.20	2,360 10.94	3.416 15.83	1,809 8.38	788 3.65	21,578
76-90	6,790 56.17	1,563 12.93	2,041 16.89	1,500 12.41	193 1.60	12,087
91-100	6,097 58.90	1,207 11.66	1,467 14.17	1,273 12.29	309 2.98	10,353
No Response	1,444 54.86	273 10.39	210 7.98	142 5.41	562 21.36	2,632
Totals	149,847	21,394	23,678	14,185	6,891	215,995

> special services for the parents of children involved in the programs. The employment of parents in the Title I projects is but one way to implement this provision. The primary goal of such activities and services should be to build the capabilities of the parents to work with the school in a way which supports their children's well-being, growth, and development.[1]

Section 106 (11) of Public Law 90-247 requires that "in case of projects including the use of education aides, the local educational agency sets forth well-developed plans providing for coordinated programs for training in which education aides and the professional staff whom they are assisting will participate together."[2]

Section 205 (a) (7) of Public Law 89-10 further requires: "That where there is, in the area served by the local educational agency, a community action program approved pursuant to Title II of the Economic Opportunity Act of 1964 (Public Law 88-452), the programs and projects have been developed in cooperation with the public or private non-profit agency responsible for the community action program."[3]

The intent of the above legislation is clearly to involve the parents of Title I children in the educational process. The parent is to be considered an essential part of that process.

There were four methods listed for securing parent involvement in Title I programs which could have been utilized by school districts: Citizens' Advisory Committees, home visits by teachers of academically disadvantaged pupils, use of parents as aides in Title I programs, and use of Title I funds to support parent education programs. If additional means were used for involving parents in Title I programs, districts responded to an "other" category. It was common for districts to indicate that more than one type of involvement was in practice.

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[1] Harold Howe II, U. S. Commissioner of Ed., ESEA Title I Program Guide, No. 44, March 18, 1968. Sec. 5.4.

[2] 90th Congress, H. R. 7819, Public Law 90-247, "Elementary and Secondary Education Amendments of 1967," January 2, 1968.

[3] 89th Congress, H. R. 2362, Public Law 89-100, "Elementary and Secondary Education Amendment of 1965," April 11, 1965.

Local Advisory Committees

The criteria for the approval of Title I ESEA applications require that a local advisory committee be established for the planning, operation and appraisal of Title I programs. The extent to which this requirement is being met can be seen in Table 4.36. Of the districts to which this study is generalizable, some 61 percent did not have a Citizens' Advisory Committee. Since this 61 percent contains a large percentage of the districts with smaller enrollment, it represents a somewhat lesser percentage of Title I pupils whose program is being conducted without the benefit of a Citizens' Advisory Committee.

Citizens' Advisory Committees were active in 69 percent of the largest districts (enrollments of more than 40,000), 62 percent of districts with enrollment of 9,000-40,000, 41 percent of districts of 3,000-8,999, and 35 percent of districts of 300-2,999 enrollment. These committees existed in 39 percent of all Title I districts.

Types of parent involvement are not exclusive categories. This means that the percentages of methods used totaled within each district stratum will exceed 100 percent since it is likely that more than one kind of involvement method was used. When compared with the smaller districts, a greater percentage of the largest districts utilized each method of parent involvement. Citizens' Advisory Committees existed in only 35 percent of the smallest districts; 50 percent used home visits by teachers of the academically disadvantaged; 39 percent used parents as aides in Title I; only 1 percent of the smallest districts used Title I funds to support parent education programs. These facts, which credit the larger districts with better fulfillment of the legislative intent for parent involvement, must be weighed with the fact that larger districts have commensorately larger needs for parent involvement programs and will frequently use more than one technique for meeting that need. The data do show that most districts, irrespective of size, tend to use one, two or three types of parent involvement. A greater percentage of smaller districts than of larger districts are failing to initiate programs of parent participation.

Table 4.36

Districts classified by size and types of parental involvement with percents by number of districts in each size category

Type of parent involvement	District size				
	Above 40,000	40,000-9,000	8,999-3,000	2,999-300	Totals
Citizens' Advisory Committees	64 69.57*	409 62.16	792 41.31	2,318 35.29	3,583 38.79
Home visits by teachers of academically disadvantaged	63 68.48	425 64.59	1,156 60.30	3,284 49.99	4,928 53.36
Use of parents as aides in Title I	69 75.00	377 57.29	792 41.31	2,576 39.21	3,814 41.29
Use of Title I funds to support parent education programs	32 34.78	80 12.16	191 9.96	64 0.97	367 3.97
Parent involvement in other ways	25 27.17	149 22.64	412 21.49	1,030 15.68	1,616 17.50
No programs for parent involvement	2 2.17	21 3.19	174 9.08	792 12.06	989 10.71
Total number of districts in each size category	92	658	1,917	6,569	9.236

* The types of parent involvement are not exclusive categories; percents will not sum to 100 since it is possible to respond more than once.

Table 4.37

Districts classified by method of selecting personnel for Title I Citizens' Advisory Committees and by type of personnel

Personnel	Method of selecting personnel for Advisory Committee								
	Appointed by district	Appointed by community organization	Appointed by school principal	Appointed by PTA	Town meeting election	Self-selection	Other methods	No partic. by this type of person	Total of all col. except last
Public school administrators	2,953	161	416	0	0	331	233	281	4,094
Public school teachers	1,868	80	1,476	12	1	155	327	363	3,919
Parents of Title I pupils	1,471	867	1,175	348	78	434	352	338	4,725
Other lay persons	1,508	626	789	331	4	341	375	330	3,974
Officials of other community action organizations	871	697	108	37	1	235	226	910	2,175
Local secondary school pupils	298	129	426	64	70	19	70	1,563	1,076
Totals	8,969	2,560	4,390	792	154	1,515	1,583	3,785	

From Table 4.36 the types and extent of parent involvement can be summarized as follows: 39 percent of the districts to which this survey can be generalized had Citizens' Advisory Committees for Title I programs; 53 percent of the districts used home visits by teachers of the academically disadvantaged; 41 percent used parents as aides in Title I programs; 4 percent used Title I funds for parent education programs; and 17 percent had other means of providing for parent involvement.

Two percent of the districts with enrollments greater than 40,000 indicated no programs for community involvement; 3 percent of the 9,000-40,000 districts, 9 percent of the 3,000-8,999 districts, and 12 percent of the 30-2,999 districts failed completely to provide programs for parent involvement.

The great majority of districts in each stratum had at least one method for securing parent involvement. The incidence with which this requisite of the legislation was ignored is cited above--as much as 12 percent of the smallest districts. One deficiency in the data must be noted here because it qualifies the positive statistics: each of the possible methods reported in the questionnaire did not specify that the parents involved were parents of disadvantaged children. There is no way, then, to ascertain whether the exact intentions of the public law were met. The participation of parents of children other than the disadvantaged does not meet the specified provision that parents of "children in the program" build their capabilities to work with the school in supporting their children's development.

Types of Personnel on Citizens' Advisory Committees and Their Selection

The type of personnel which make up a Citizens' Advisory Committee determines its relative validity as an instrument of community participation. The combination of lay persons with school officials may establish a very functional advisory committee; therefore, the presence of school personnel is not in itself a detriment to Citizens' Advisory Committees, but a preponderance of such people hinders the operation of a community participatory body. In addition, the method of selecting personnel for a Citizens' Advisory Committee may itself be a means of securing community involvement.

Reports of committee composition indicate that committee members were appointed by the district far more often than by any other method, regardless of composition of the committee (see Table 4.37). Other methods, however, show far more parent participation in committee composition.

The criteria provided by Title I legislation which are pertinent to the interpretation of the data are first, that when there is a community action program already operating, new Title I projects should be developed in cooperation with it, and second, that adequate provision must be made for the participation of parents of children involved in the programs. In 75 percent of the school districts with Citizens' Advisory Committees, the personnel of those committees included an "official of a community action organization." There is no record of numbers of each type of personnel, however, so it is not possible to say whether 75 percent of the districts with committees had one or many such members. This is a relatively high proportion and may possibly include most of the cases where community action organizations were operating simultaneously with Title I programs; but there is no evidence available to this study as to when, if at all, the 61 percent of the districts without Citizens' Advisory Committees ever fulfilled that requirement of the public law. Only 9 percent of the districts with Citizens' Advisory Committees did not have any participation by parents of Title I pupils. This means that of the 39 percent of the districts with Citizens' Advisory Committees, 91 percent had at least one member who was the parent of a Title I pupil.

Citizens' Advisory Committees were utilized in 3,583 of the school districts reported in this study. Ninety-two percent of these reported that they had public-school administrators as at least one member; 90 percent had public-school teachers as members; 91 percent had parents of Title I pupils as members; 91 percent had other lay members; 75 percent had members who were officials of other community action organizations; 56 percent had local secondary-school pupils as members. Therefore, it is not possible to determine if 50 percent of the membership were parents of disadvantaged children and representatives of a Community Action Agench as has been recommended.*

Duties of Citizens' Advisory Committee

The various responsibilities of Title I Citizens' Advisory Committees are detailed in Table 4.38. Both frequency and diversity of duty decreased as school district size decreased. "Supplying information on parents' views of unmet educational needs" was the most frequently found duty (82 percent of districts with a committee, 32 perc of all districts). The frequency of all duties is notably lower in th smaller school districts. "Recommending teacher personnel policy cha is the duty with lowest frequency, being found in only 3 percent of districts with a committee, and completely absent from the smallest school districts. The recommending of Title I fund expenditures was a duty of the Citizens' Advisory Committee in 58 percent of those distr with a committee.

In general, it does not appear that the type of duties performed by a Citizens' Advisory Committee differ greatly with size of district.

Teachers Trained with Parents of the Pupils in Their School

Joint in-service training of teachers and parents took place in 9 percent of the Title I school districts, Joint-training was carrie out in a greater proportion of the larger districts than of the smalle districts. Forty-two percent of the districts with an enrollment of 40,000 or more pupils had joint training of parents and teachers; 12 percent of districts of 9,000-40,000 enrollment had joint programs; 17 percent of districts of 3,000-8,999 had joint training programs; and only 6 percent of the districts of 300-2,999 had joint in-service training of teachers and parents.

These data must be reviewed in light of the requirements of the Elementary and Secondary Education Amendments of 1967. The law specifically requires that:

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[*] 1968 Elementary and Secondary Education Act, Title I Program Guide, No. 46.

Table 4.38

Districts classified by size and duties performed by Title I Citizens' Advisory Committees with frequency distribution by district size

Duties performed by Citizens' Advisory Committee	District size				
	Above 40,000	40,000-9,000	8,999-3,000	2,999-300	Totals
Supplied information on parents' views of unmet educational needs	58 90.63* 63.04**	340 83.13* 51.67**	729 92.05* 38.03**	1,803 77.78* 27.45**	2,930 81.78* 31.72**
Supplied information on students' views of unmet educational needs	27 42.19 29.35	122 29.83 18.54	364 45.96 18.99	515 22.22 7.84	1,028 28.69 11.13
Made recommendations on the expenditure of Title I funds	52 81.25 56.52	271 66.26 41.19	539 68.06 28.12	1,224 52.80 18.63	2,086 58.22 22.59
Participated in the development of Title I applications	31 48.44 33.70	175 42.79 26.60	412 52.02 21.49	1,095 47.24 16.67	1,713 47.81 18.55
Reviewed Title I applications	39 69.94 42.39	196 47.92 29.79	523 66.04 27.28	1,288 55.57 19.61	2,046 57.10 22.15
Recommended improvements of Title I programs	63 98.44 68.48	319 78.00 48.48	586 73.99 30.57	1,095 47.24 16.67	2,063 57.58 22.34
Participated in Title I program evaluations	33 51.56 35.87	154 37.67 23.40	317 40.03 16.54	837 36.11 12.74	1,341 37.43 14.52
Recommended teacher-personnel policy changes	8 12.50 8.70	32 7.82 4.86	63 7.95 3.29	0 0 0	103 2.87 1.12

* Percent of the districts with a committee in the size category.

** Percent of all districts of that size represented in the study.

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> . . .In the case of projects involving the use of education aides, the local educational agency sets forth well-developed plans for providing for coordinated programs of training in which education aides and the professional staff whom they are assisting will participate together.

The figures cited above must, therefore, be compared with the data as to how many districts used parents as aides in Title I.

Of the largest districts, 75 percent reported using parents as aides, but only 42 percent had joint in-service training of teachers and parents. In 33 percent of the largest districts, therefore, parents were used as aides without having received the specific type of training required by the 1967 amendment to ESEA 1965. In districts of 9,000-40,000 pupils, 57 percent used parents as aides but only 12 percent trained them in conjunction with teachers. In districts of 3,000-8,999 enrollment, 41 percent used parents as aides but only 17 percent of those districts reported joint in-service training. In 39 percent of the smallest districts (300-2,999 enrollment), parents were used as aides, but only 6 percent of these Title I school distric provided joint training programs. It is apparent that in the majority of cases, the specifications of the 1967 amendment were not met during the 1968-69 school year.

Support from State Departments of Education in Creating Citizens' Advisory Committees

Districts in every state were asked what kind of aid they received from their State Department of Education in creating Title I ESEA Citizens' Advisory Committees within their districts. The possibl responses were "Yes, Assistance" (involvement with the actual tasks of establishing committees), "Yes, Advice" (verbal or instructional help in setting up committees), and "No help of either kind." For evaluative purposes, "assistance" is regarded as a greater commitment by State Departments of Education to the project of establishing Citizens' Advisory Committees than is "advice." Assistance entails greater allocation of State Department personnel and time. From among the 9,23

Title I school districts, 3,937 districts indicated that they received neither "assistance" nor "advice" from their State Education Department. A review of the data showed that 464 districts with Citizens' Advisory Committees established these committees without advice or assistance from their State Department of Education. The Survey instructed only those with Citizens' Advisory Committees to answer this question; it may be calculated, then, that 818 districts received two kinds of help.

Advice was more frequently given than assistance. One-half of the states which were not atypical in size or region, gave some aid to all of their districts to help establish Citizens' Advisory Committees.

Chapter V

The Impact of Compensatory Education Programs On Pupils' Behavior

The focus in this chapter is on what changes in pupils' academic and social behavior can be attributed to participation in compensatory education programs.

Because compensatory programs differ so widely in their objectives--at times even within a single school district--it is difficult to assess the benefits of Title I supported programs from a national perspective. In terms of how compensatory education should benefit individual pupils, no single criterion can be found against which all programs should be measured. Well-designed programs will use different means to achieve the desired ends which were chosen in light of the unique needs of the pupils. A program designed to provide critically needed psychological services must not be held accountable for showing large gains in reading achievement.

The Elementary and Secondary Education Act of 1965 did not specify what benefits disadvantaged pupils should receive from programs assisted by Title I. Each local school district is free to formulate its objectives and to use Title I funds to meet the critical needs of its pupils. Although the programs differ greatly at the operational level, at a more general level there is a commonality among the needs of disadvantaged pupils and the means by which local school districts seek to meet these needs. Pupil needs and program objectives fall into three broad classes: (1) life-support services, (2) basic skills development, (3) personal and social development.

The benefits to pupils of life-support services (viz., clothing, food, dental and medical care) follow immediately from participation in life-support programs. One can infer that, since delivery of such services is nearly always reliable and effective, pupils who participated in life-support programs benefited appropriately from them. Consequently, the benefits to pupils of life-support services can be inferred from data on participation in life-support programs. Such data were reported in Chapter IV. (For more extensive data see Chapter V of the Preliminary Report.)

Growth in basic skills can be observed in the achievement test performance and the reports of teachers on the academic progress of their pupils. These two sources of data are drawn upon in the next section of this chapter to assess the impact of compensatory programs on the development of basic skills.

In the third section of this chapter, teachers' ratings of pupils' personal development and growth in social skills are examined.

Development of Basic Academic Skills

Achievement Test Data

Achievement data obtainable without extensive additional testing were reported from existing school records for many of the 104,080 pupils in the 1969 Survey sample. However, few comparable pre- and posttest records for individual pupils were available for use in determining achievement gains across the school year. A total of 7,784 "matched" pre- and posttest scores in reading were reported, representing only seven and one-half percent of the students in the sample. Most of these records came from large urban districts, increasing the non-representativeness of the gain-analyses sample and making it impossible to generalize the findings to the national public-school population or even to all schools operating compensatory education programs.

Throughout the analyses, inferences drawn refer to those pupils and schools like the ones in the sample of 7,784 pupils (a more specific description of this group is given in Appendix B). Only in the area of reading were sufficient numbers of matched pre- and posttest scores available from the 1969 Survey data to support even a tentative analysis of the impact of compensatory education programs. More Title I funds were expended during the last two years for reading programs than for any other academic program, and these reading programs reached more pupils than any other single academic program supported by Title I.*

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* As reported in the 1968 Report on Education of the Disadvantaged. U.S. Dept. of Health, Education, and Welfare.

In order to meet basic requirements for "matched" pre-program and post-program achievement data for each pupil included in the reading gain score sample, as well as obtaining an arbitrary minimum of 500 sets of scores for each analysis, much achievement data were necessarily discarded. From 20 achievement test batteries specified in the Survey questionnaire for grades two, four and six, only 7 grade-by-test reading gain-score files were analyzable.

Pre-program and Post-program Discrepancy Scores

The following figures allow comparison of three categories of pupils with respect to reading performance: (1) those pupils who did not participate in any disadvantaged reading programs; (2) those who participated in only one disadvantaged reading program; (3) those who participated in two or more disadvantaged reading programs. The discrepancy score for each pupil was obtained by subtracting his grade level at the time he took the test from his obtained score in grade level units. (Note that each month of the school year is counted as one tenth of a grade level. Therefore, the grade level of a second-grade pupil during the month of September would be 2.0 while this same pupil's grade level the following June would be 2.9.) If a pupil in grade two took the test in October and achieved a score of 2.5 years, then his discrepancy score would be 2.5 yrs. - 2.1 yrs. = +.4 yrs.

The graphs that follow reveal the percentage of students who received a score equal to or less than a certain discrepancy score. For example, Fig. 5.1 is the graph of second-grade pupils

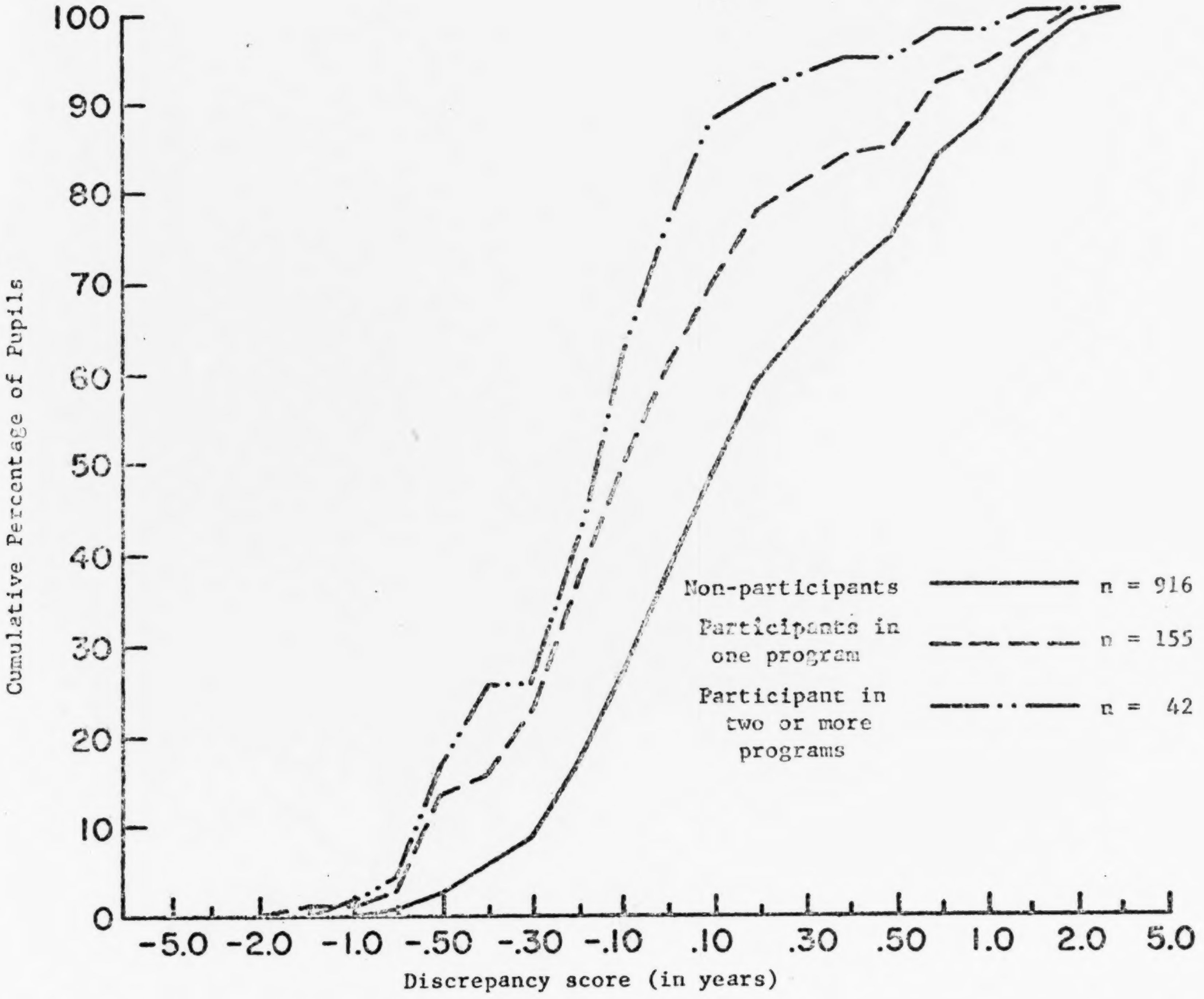


Figure 5.1. Cumulative percentage distribution of differences between pre-program reading achievement scores and grade equivalent norms (discrepancy scores) for second grade pupils who completed the Metropolitan Achievement Tests

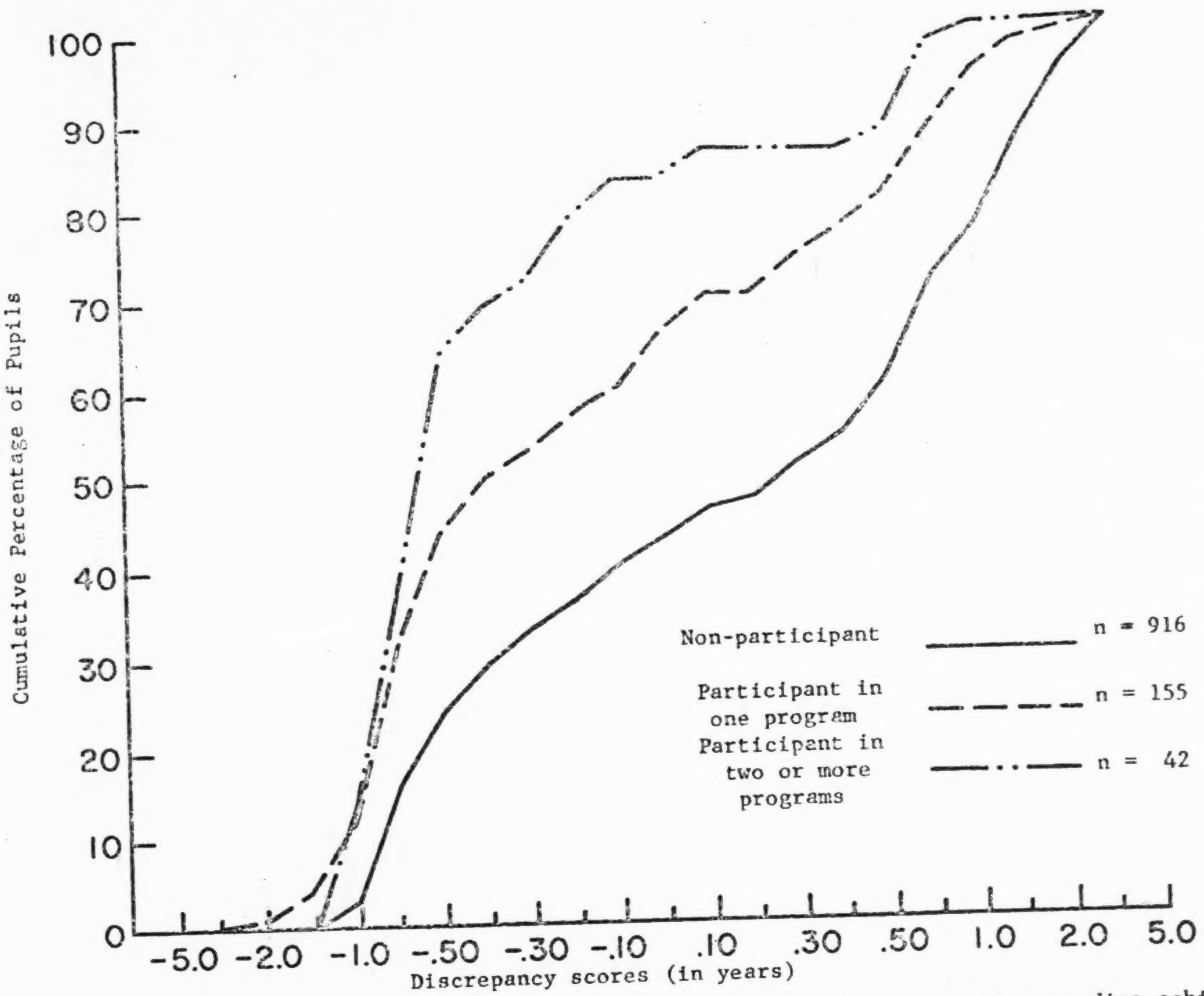


Figure 5.2. Cumulative percentage distribution of differences between post-program reading achievement scores and grade equivalent norms (discrepancy scores) for second grade pupils who completed the Metropolitan Achievement Tests

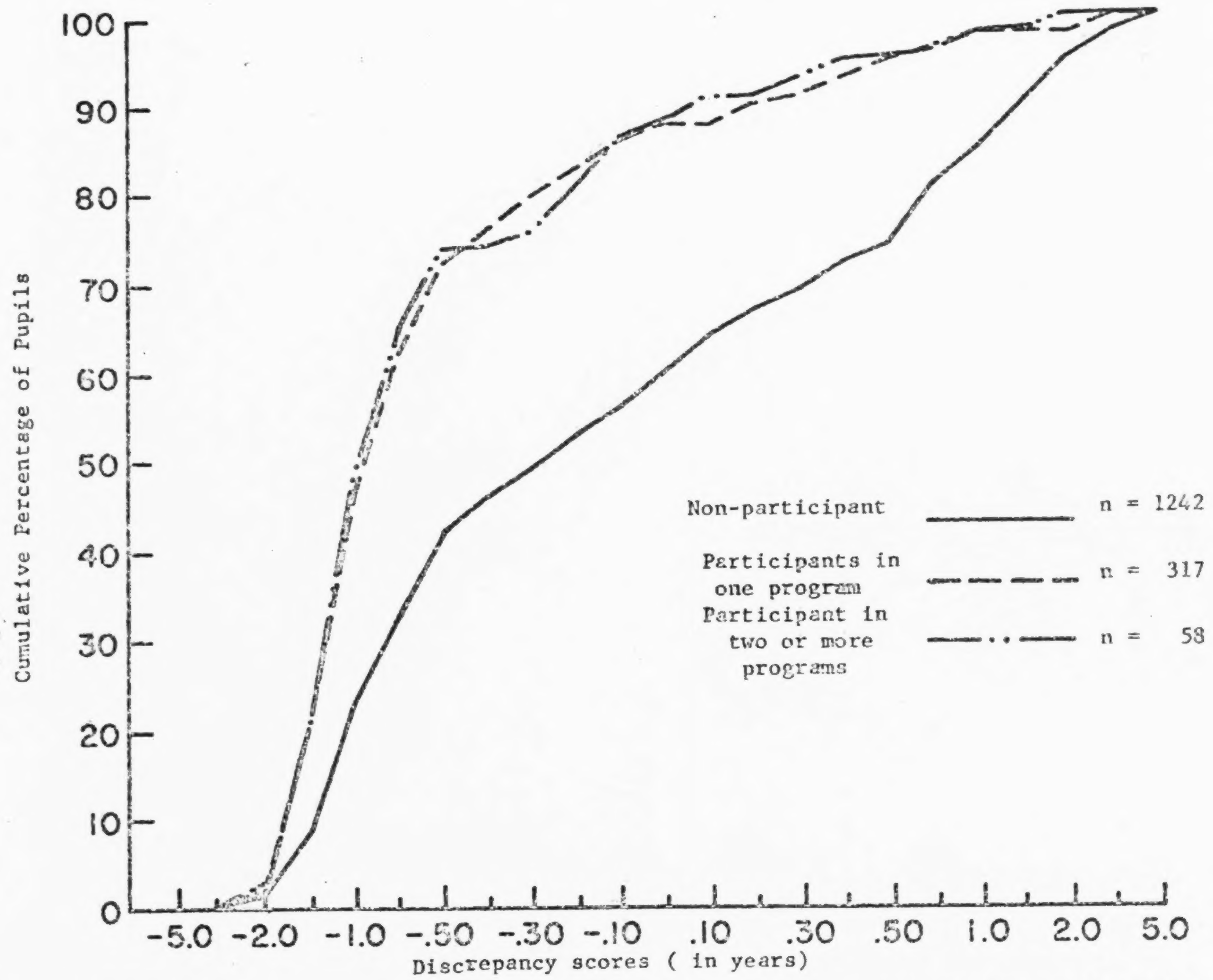
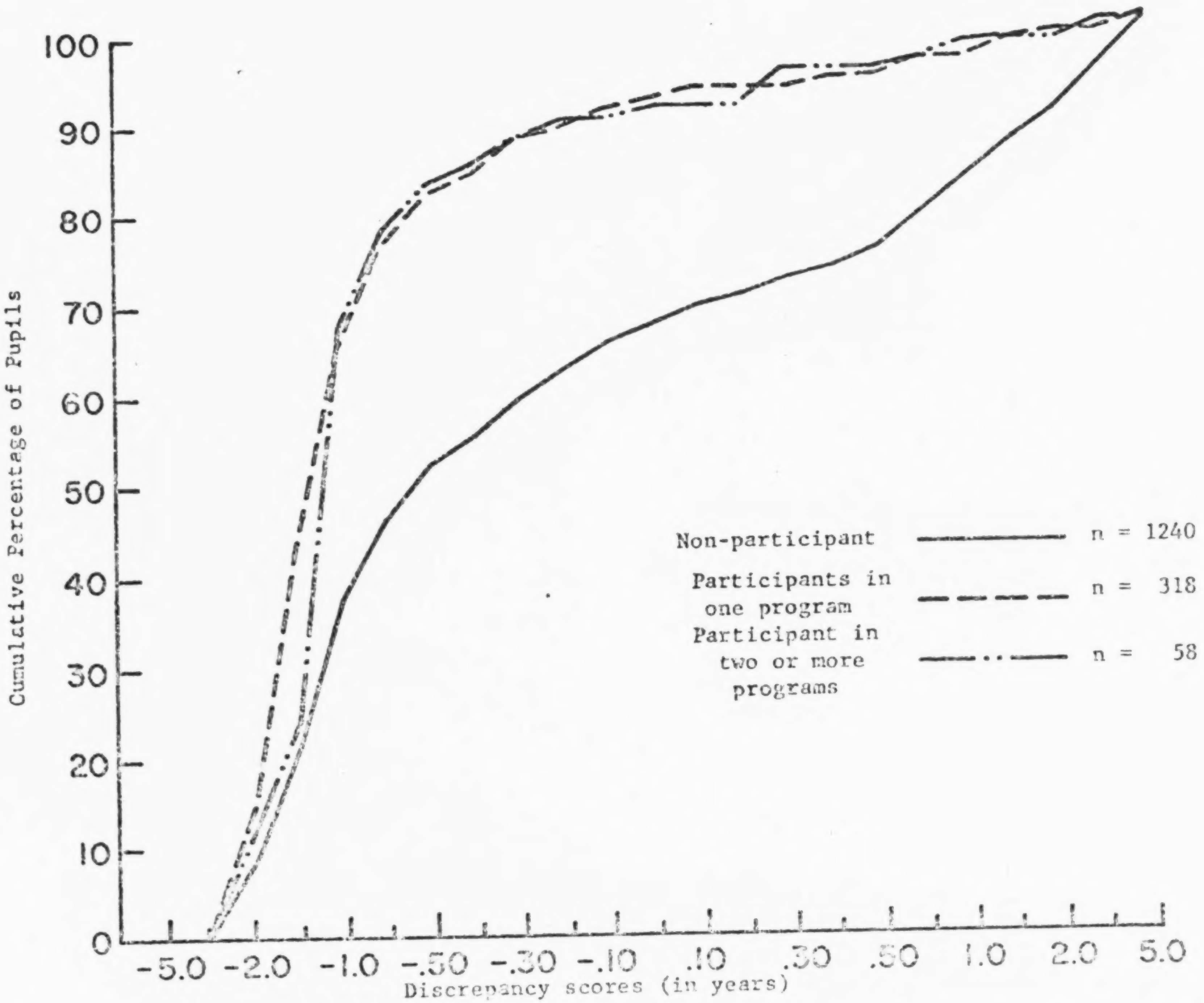


Figure 5.3. Cumulative percentage distribution of differences between pre-program reading achievement scores and grade equivalent norms (discrepancy scores) for fourth grade pupils who completed the Metropolitan Achievement Test



[illegible] 5.4. Cumulative percent distribution of differences between post-[illegible] ent scores

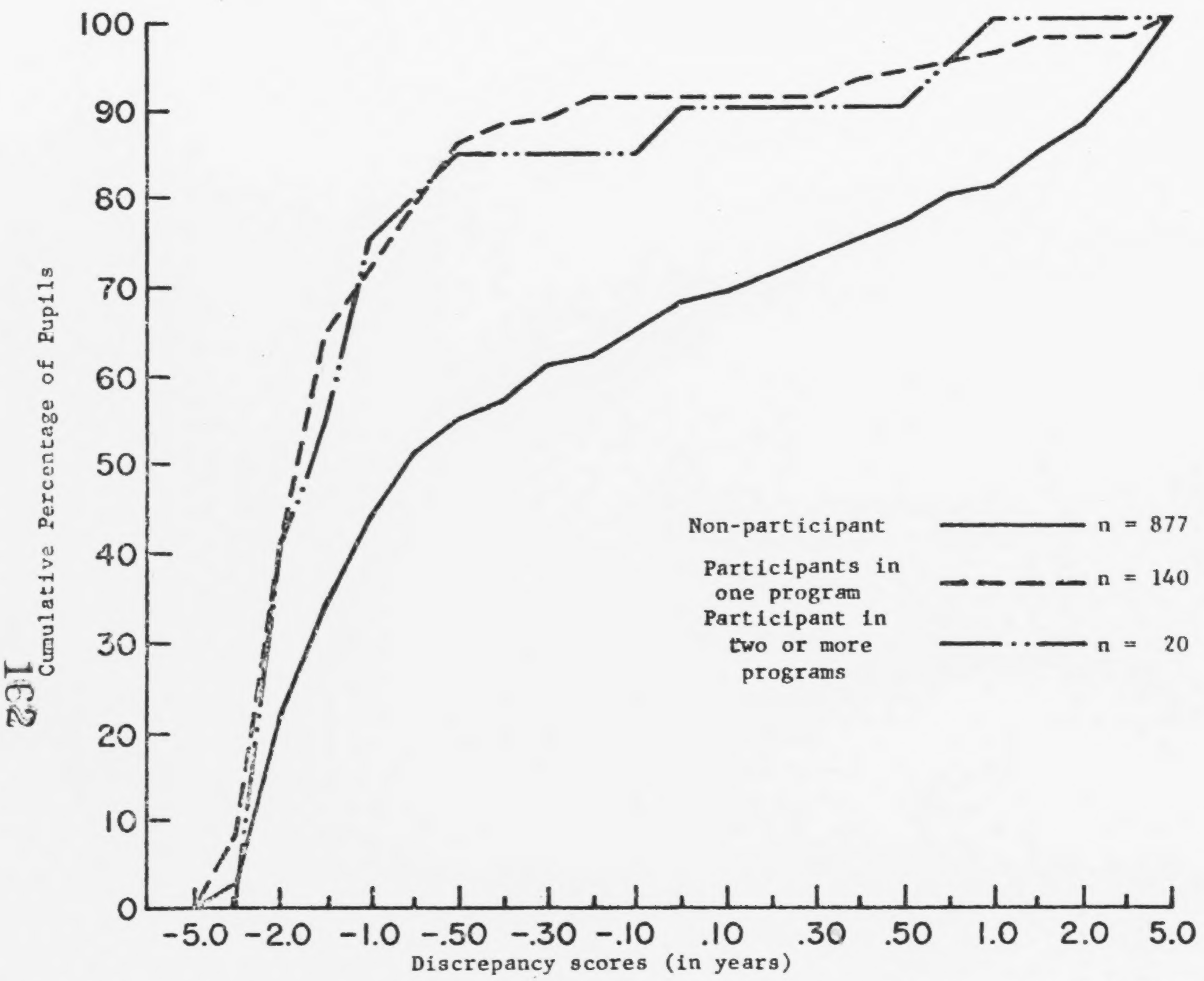


Figure 5.5. Cumulative percentage distribution of differences between pre-program reading achievement scores and grade equivalent norms (discrepancy scores) for sixth grade pupils who completed the Metropolitan Achievement Tests

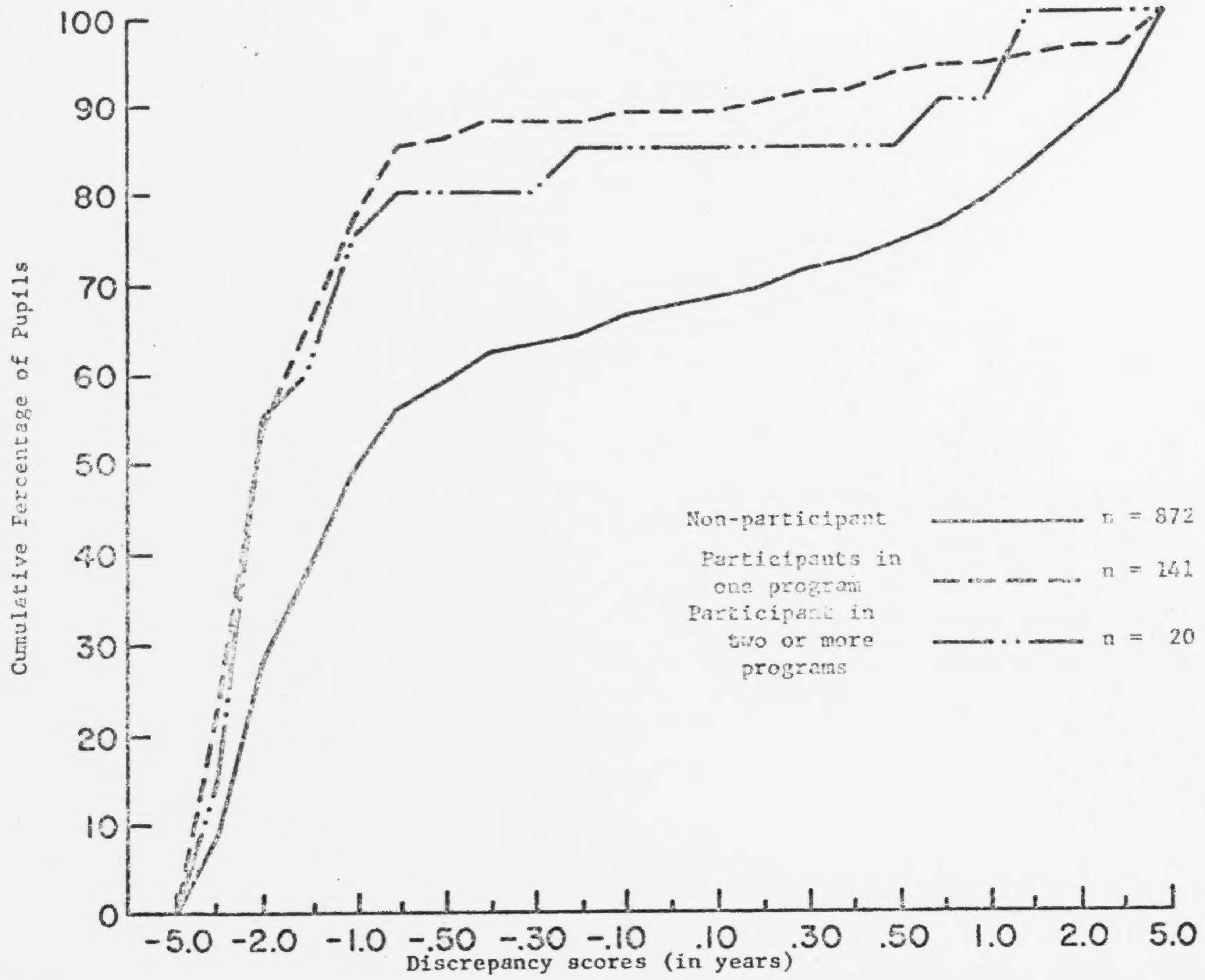


Figure 5.6. Cumulative percentage distribution of differences between post-program reading achievement scores and grade equivalent norms (discrepancy scores) for sixth grade pupils who completed the Metropolitan Achievement Tests

who took the pre-program Metropolitan Achievement Test. It can be seen that of the 916 nonparticipants in disadvantaged reading programs, 38 percent had discrepancy scores in the range -5.0 years to 0.0 years; 61 percent of one-program participants and 76 percent of the two-or-more-programs participants achieved discrepancy scores in the same range, i.e., equal to or less than grade level (0.0).

Graphs of pre-program and post-program reading achievement discrepancy scores for the Metropolitan Achievement Test for grades two, four and six appear as Figures 5.1-5.6. (The remaining data for other standardized tests, which closely parallel the data in Figures 5.1-5.6, appear in Appendix B.)

As an example of how the graphs are interpreted, consider Figure 5.1 The line showing the cumulative distribution of discrepancy scores for the 916 nonparticipants in disadvantaged reading programs who were pretested with the Metropolitan Achievement Test (Reading) is generally to the right of the lines for participants in one or in two or more disadvantaged reading programs. Hence, the discrepancy pretest scores were generally more positive for nonparticipants, meaning that nonparticipants were showing better reading performance (more than 60 percent were reading above grade level) than those pupils placed in disadvantaged reading programs. Thus, participation in disadvantaged reading programs tended to be allocated to pupils evidencing reading performance which was further below grade level. Note, however, (in Figure 5.1) that about 35 percent of the pupils participating in one disadvantaged reading program were reading above grade level at the time of the pretest. In Figure 5.2, each of the graphs of the posttest discrepancy scores of the same group of second-grade pupils shows a downward shift. Thus, each group (non-participants, participants in one reading program, participants in two or more programs) fell behind normal growth in reading performance during the school year. Not only were greater numbers of pupils in each group reading below grade level on the posttest than on the pretest, but those who fell below grade level were further below expectancy at the end of the year than at the beginning. The same pattern is evident in Figures 5.3-5.6 for grades four and six. The trend of reading performance falling in grade level for a great percentage of pupils between the pretest and posttest was evident for all three groups in grades two, four and six on each standardized test from which data were analyzed (see Figures B.1 to B.8 in Appendix B).

Summary data on the percentage of participating and nonparticipating pupils reading below grade level on pretests and posttests are presented in Table 5.1. As an example of how Table 5.1 is read, note that among 197 second-grade participants in reading programs for the disadvantaged, 64.0 percent of them scored below their grade level on the Metropolitan Reading Achievement Test administered prior to the reading program; 70.0 percent of these same pupils scored below grade level on the post-program test.

It is clear from an inspection of the data in Table 5.1 that

Table 5.1

Percentages of Participants and Nonparticipants Scoring Below Grade Level on Pretests and Posttests.

Test	Status*	N	Percent of Pupils Below Grade-level on Pretest	Percent of Pupils Below Grade-level on Posttest	Difference between Posttest & Pretest Percents
GRADE 2					
Metropolitan	Participant	197	64.0%	70.0%	6.0%
	Nonparticipant	916	37.5%	43.4%	5.9%
Stanford	Participant	289	88.6%	84.8%	-3.8%
	Nonparticipant	803	58.5%	46.8%	-11.7%
GRADE 4					
Iowa	Participant	217	83.9%	86.2%	2.3%
	Nonparticipant	847	55.3%	63.9%	8.6%
Metropolitan	Participant	376	87.7%	92.0%	4.3%
	Nonparticipant	1242	60.1%	66.5%	6.4%

(Continued)

Table 5.1 (Continued)

Test	Status*	N	Percent of Pupils Below Grade-level on Pretest	Percent of Pupils Below Grade-level on Posttest	Difference between Posttest & Pretest Percents
GRADE 6					
Iowa	Participant	165	93.9%	95.1%	1.2%
	Nonparticipant	920	64.3%	64.0%	-0.3%
Metropolitan	Participant	161	91.2%	88.2%	-3.0%
	Nonparticipant	877	67.5%	66.9%	-0.6%
Stanford	Participant	117	87.2%	83.9%	1.7%
	Nonparticipant	641	60.3%	61.0%	0.7%

*Pupils were classified as either "participants" (i.e., participants in one or more reading programs for disadvantaged pupils) or "nonparticipants" (i.e., nonparticipants in reading programs for the disadvantaged).

a substantially greater percentage of participants than of nonparticipants were below grade level. This difference on the pretest was generally of the order of 30 percent. The data show evidence that more pupils (participants and nonparticipants) achieved below grade level on the posttest than on the pretest. The last column in Table 5.1 shows the percentage increase in pupils scoring below grade level from pretest to posttest; for example, 6.0 percent more second-grade participants scored below grade level on the Metropolitan posttest than on the pretest. In 9 of 14 instances, a greater percentage of either participants or nonparticipants scored below grade level on the posttest than on the pretest. (The apparent decrease in percentage of pupils below grade level for the Stanford Achievement Test, grade two, should not be taken at face value. For these data, the pretest was the Stanford Achievement Test-Primary I and the posttest was the Primary II. The apparent increase in achievement could have resulted from a lack of perfect articulation of norms between the two forms of the test.)

There is no clear evidence in Table 5.1 that participation in reading programs for the disadvantaged had any effect whatsoever on the rate at which pupils fell below grade level in reading achievement. The lack of representativeness and the fact that the data came from a relatively small number of large, urban school districts will not support any detailed interpretation of Table 5.1 No conclusions are warranted by the data beyond those that pupils in Title I schools appear to be reading below grade level at a higher rate than pupils generally and that their reading deficit may be increasing over the course of the school year.

Analyses of Gain scores on Reading Achievement Tests

The analyses of discrepancy scores were supplemented by the analysis of reading achievement "gain scores."[*] Gain scores were computed for each pupil who took a comparable standardized reading achievement test both early and late in the school year. (The "gain score" was defined so that it would be independent of the pupil's pretest performance and the time elapsing between pretest and posttest.) The gain scores were averaged and compared for nonparticipants, participants in one, and participants in two or more disadvantaged reading programs. The data are summarized in Table 5.2.

It is apparent in Table 5.2 that the analyses of reading achievement gain scores show nonparticipants to have made larger gains than participants in either one or in two or more disadvantaged reading programs. "Participants" of either type tended to lose ground during the course of the school year; nonparticipants did not.

The relationships were studied between biographical data on pupils and their reading achievement gains as these gains might have interacted with participation in disadvantaged reading programs.

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[*] See Appendix B for a discussion of the definition of "gain score."

Table 5.2

Average reading achievement gain scores from pretest to posttest for nonparticipants, participants in one, and participants in two or more disadvantaged reading programs (grades 2, 4 and 6).

		Average Gain Score for		
Grade	Test	Nonparticipants	Partic. in one program	Partic. in two or more programs
2	Metropolitan Achiev. Test	.047 yrs.(916)*	-.203 yrs.(155)	-.268 yrs.(42)
2	Stanford Achiev. Test	.072 yrs.(803)	-.234 yrs.(227)	-.073 yrs.(62)
4	Metropolitan Achiev. Test	.040 yrs.(1245)	-.151 yrs.(318)	-.020 yrs.(58)
4	Iowa Tests of Basic Skills	.046 yrs.(826)	-.109 yrs.(178)	-.566 yrs.(32)
6	Metropolitan Achiev. Test	.029 yrs.(885)	-.161 yrs.(141)	-.146 yrs.(21)
6	Iowa Tests of Basic Skills	.043 yrs.(920)	-.208 yrs.(151)	-.580 yrs.(14)
6	Stanford Achiev. Test	.012 yrs.(645)	-.060 yrs.(104)	-.115 yrs.(13)

* Sample size in parentheses.

These analyses were directed at the question of whether a particular _type_ of pupil participating in a reading program showed consistently greater gains in reading performance than other types of participating pupils. It was possible, even though there was no evidence of reading gains for all participants, that participating pupils made noticeably greater gains than, e.g., nonparticipating Spanish-surnamed pupils (after differing rates of gain for participants and nonparticipants generally are controlled). The influence of the following biographical variables was examined: (1) pupil's living group (institution for neglected, institution for delinquent, migrant agricultural family, other); (2) ethnic group membership; (3) home language (English or non-English); (4) urbanism of pupil's home; (5) urbanism of school; (6) pre-kindergarten and kindergarten schooling; (7) teacher's estimate of highest grade the pupil will complete; (8) educational attainment of head of household; (9) mother's educational level; (10) teacher's experience; (11) teacher's recent training for teaching the disadvantaged; (12) grouping of classroom for instruction; (13) occupational level of head of household; (14) family income. None of these characteristics showed any consistent interaction with participation in disadvantaged reading programs. That is, there was no evidence that a particular type of pupil gained more _as a result of participation in a disadvantaged reading program_ than the gains made by that type of pupil irrespective of participation. (For a detailed presentation of the relevant data, see Tables 6.2-6.107 in the _Preliminary Report_.)

Evidence was obtained that pupil characteristics showed consistent relationships to reading achievement gains; however, these relationships were independent of whether or not the pupil was a participant in a disadvantaged reading program. These relationships were in quite predictable directions, e.g., educational level of parents, occupational level of head of household and gross family income were highly related to pupils' reading gains in the expected manner; pupils from homes in which English was the primary language made greater gains than pupils from non-English-speaking families; teachers' estimates of the highest grade the pupil can be expected to complete were highly related to reading gains. There was no apparent relationship between urbanism of the school and reading gains.

Teachers' Ratings of Pupil Gains in Basic Skills

Teachers rated their pupils on six basic academic skills: reading proficiency, math proficiency, understanding written instruction, understanding oral instruction, oral expression, and independence of learning. Each pupil's behavior in these six respects was rated either as having "changed some for the worse," "not changed and change was desirable," "not changed but change was not needed," "changed some for the better," "changed greatly for the better." In Tables 5.3-5.8, pupils' gains in the six basic academic skills are cross-classified with their participation in any special academic programs.

Teachers reported that about 68 percent of the pupils in disadvantaged academic programs (this percentage represents nearly 700,000 pupils in grades two, four and six) made some or large improvements in reading proficiency; approximately 59 percent of the pupils who did not participate in special academic programs were reported to have made some or large gains in reading proficiency (see Table 5.3). A similar advantage for participating pupils was observed with respect to improved performance in understanding written instructions (see Table 5.4). Among participants in disadvantaged academic programs, about 50 percent were reported to have made some or large gains; the comparable percentage for nonparticipants was approximately 44 percent. Hence, in the judgment of their teachers, a greater proportion of participating than of nonparticipating pupils improved in reading performance.

With regard to math proficiency (Table 5.5), no notable difference was observed between the rates of "some or large changes for the better" for participants and nonparticipants in disadvantaged academic programs; 58 percent was reported for both groups. No important differences in the rate of some or large improvements between participants in disadvantaged academic programs and nonparticipants were observed with respect to "oral expression" and "independence of learning," (see Tables 5.7 and 5.8). Participants showed a nearly 12 percent greater incidence of some or large improvement in understanding oral instructions than nonparticipants, in the judgment of the teachers (Table 5.6).

Table 5.3

Pupils classified by change in pupil's reading proficiency (during 1968-69 school year) and by pupil participation in special academic programs during regular school year with percents by column

Change in pupil's reading proficiency	Totals	Pupil participation in special academic programs during regular school year			
		No. partic. in special program	Partic. in disadventaged program	Partic. in enrichment program	Both disadv. and enrichment programs
	5733974	4248020	1009845	351676	124433
Some change for worse	78934 1.38	55456 1.31	19832 1.96	2075 .59	1571 1.26
No change but change desirable	938679 16.37	664500 15.64	222334 22.02	32291 9.18	19554 15.71
No change but change not needed	1074493 18.74	911290 21.45	51559 5.11	97029 27.59	14615 11.75
Some change for better	2902021 50.61	2083032 49.04	592304 58.65	163003 46.35	63682 51.18
Large change for better	559017 9.75	404040 9.51	94542 9.36	47875 13.61	12560 10.09
No response	180830 3.15	129702 3.05	29274 2.90	9403 2.68	12451 10.01

Table 5.4

Pupils classfiied by change in pupil's performance regarding understanding written instructions (during 1968-69 school year) and by pupil participation in special academic programs during regular school year with percents by column

Change in pupil's behavior regarding understanding written instructions	Totals	Pupil participation in special academic programs during regular school year			
		No. partic. in special program	Partic. in disadvantaged program	Partic. in enrichment program	Both disadv. and enrichment programs
	5733962	4248018	1009845	351667	124432
Some change for worse	64442 1.12	45406 1.07	15521 1.54	2394 .68	1121 .90
No change but change desirable	1145482 19.98	762595 17.95	315492 31.24	26273 10.32	31122 25.01
No change but change not needed	1782949 31.09	1467062 34.54	139664 13.83	149008 42.37	27215 21.87
Some change for better	2232905 38.94	1598725 37.63	453022 44.86	128336 36.49	52822 42.45
Large change for better	377777 6.59	202033 6.64	55381 5.48	31265 8.89	9098 7.32
No response	130407 2.28	92197 2.17	30765 3.05	4391 1.25	3054 2.45

Table 5.5

Pupils classified by change in pupil's math proficiency (during 1968-69 school year) and by pupil participation in special academic programs during regular school year with percents by column

Change in pupil's math proficiency	Totals	Pupil participation in special academic programs during regular school year			
		No. partic. in special program	Partic. in disadvantaged program	Partic. in enrichment program	Both disadv. and enrichment programs
	5733977	4248022	1009845	351677	124433
Some change for worse	121307 2.11	87723 2.06	25300 2.51	5726 1.63	2558 2.06
No change but change desirable	1085257 18.92	764212 17.99	254392 25.19	40573 11.54	26080 20.96
No change but change not needed	1033619 18.03	852980 20.08	72433 7.17	94827 26.96	13379 10.75
Some change for better	2720552 47.45	2006290 47.23	504312 49.94	151367 43.04	58583 47.08
Large change for better	526872 9.19	383529 9.03	83302 8.25	47499 13.51	12542 10.08
No response	246370 4.30	153288 3.61	70106 6.94	11685 3.32	11291 9.07

Table 5.6

Pupils classified by change in pupil's performance regarding understanding oral instructions (during 1968-69 school year) and by pupil participation in special academic programs during regular school year with percents by column

Change in pupil's behavior regarding understanding oral instruction	Totals	Pupil participation in special academic programs during regular school year			
		No. partic. in special program	Partic. in disadvantaged program	Partic. in enrichment program	Both disadv. and enrichment programs
	5733976	4248019	1009844	351676	124437
Some change for worse	62419 1.09	45765 1.08	13947 1.38	1586 .45	1121 .90
No change but change desirable	962621 16.79	662758 15.60	243635 24.13	32435 9.22	23793 19.12
No change but change not needed	1988164 34.67	1621621 38.17	175685 17.40	159316 45.30	31542 25.35
Some change for better	2242928 39.12	1569606 36.95	491833 48.70	125543 35.71	55946 44.96
Large change for better	350900 6.12	254529 5.99	60479 5.99	27371 7.78	8521 6.85
No response	126944 2.21	93740 2.21	24265 2.40	5425 1.54	3514 2.82

Table 5.7

Pupils classified by change in pupil's behavior re oral expression (during 1968-69 school year) and by pupil participation in special academic programs during regular school year with percent by column

Change in pupil's behavior re oral expression	Totals	Pupil participation in special academic programs during regular school year			
		No. partic. in special program	Partic. in disadvantaged program	Partic. in enrichment program	Both disadv. and enrichment programs
	5733971	4247020	1009842	351675	124434
Some change for worse	49643 .86	37101 .87	10614 1.05	1294 .37	634 .51
No change but change desirable	1241481 21.65	874307 20.58	280783 27.80	54929 15.62	31462 25.28
No change but change not needed	1365258 23.81	1113365 26.21	125367 12.41	104592 29.74	21934 17.63
Some change for better	2536536 44.24	1836844 43.24	493970 48.92	150295 42.73	55427 44.54
Large change for better	385080 6.72	378418 6.56	65630 6.50	33434 9.51	7598 6.11
No response	155973 2.72	107985 2.54	33478 3.32	7131 2.03	7379 5.93

Table 5.8

Pupils classified by change in pupil's behavior regarding independent learning (during 1968-69 school year) and by pupil participation in special academic programs during regular school year with percents by column

Change in pupil's behavior re independent learning	Totals	Pupil participation in special academic programs during regular school year			
		No. partic. in special program	Partic. in disadvantaged program	Partic. in enrichment program	Both disadv. and enrichment programs
	5733973	4248019	1009843	351676	124435
Some change for worse	86221 1.50	59982 1.41	21827 2.16	2455 .70	1957 1.57
No change but change desirable	1402268 24.46	948113 22.32	366063 36.25	41909 14.76	36183 29.08
No change but change not needed	1333296 23.25	1106909 26.06	100668 9.97	106987 30.42	18732 15.05
Some change for better	2208903 38.52	1604592 37.77	412471 40.84	138854 39.48	52986 42.58
Large change for better	514101 8.97	388660 9.15	71282 7.06	43397 12.34	10762 8.65
No response	189184 3.30	139763 3.29	37532 3.72	8074 2.30	3815 3.07

Personal and Social Development

Teachers rated 15 aspects of the personal and social development of their pupils. Ratings were obtained for both nonparticipants and participants in disadvantaged academic programs; ratings were recorded in the same five descriptive categories of change which were reported in Section II above.

The percentage of nonparticipants and participants who showed some or large improvements in awareness of current events slightly favored nonparticipants (41.09 percent for nonparticipants and 37.64 percent for participants in disadvantaged academic programs). There was essentially no difference between nonparticipants and participants (38.37 percent and 38.60 percent, respectively) with respect to some or large improvements in creativity during the course of the school year.

The rates of some or large improvements favored participants in disadvantaged academic programs over nonparticipants by 4-5 percent on each of the following characteristics: self-concept, accuracy of self-evaluation, educational aspirations, reduction of anxiety, liking for the teacher, attendance, and dress habits (see Chapter VI of the Preliminary Report for more detailed data).

With respect to six characteristics of personal and social development, the percentage of participants making some or large improvements was about 10 percent larger than the rate of such gains among nonparticipants. The six xharacteristics were relationships with other pupils, relationships with adults, attentiveness,

Table 5.9

Pupil's change in behavior regarding relationships with other pupils (during 1968-69 school year) and by pupil participation in special academic programs during regular school year with percents by column

Change in pupil's behavior regarding relationships with other pupils	Totals	Pupil participation in special academic programs during regular school year			
		No. partic. in special program	Partic. in disadvantaged program	Partic. in enrichment program	Both disadv. and enrichment programs
	5733976	4248022	1009843	351677	124434
Some change for worse	130417 2.27	96927 2.26	26239 2.60	5297 1.51	1954 1.57
No change but change desirable	757292 13.21	536295 12.62	168012 16.64	34391 9.78	18594 14.94
No change but change not needed	2758781 48.11	2142260 50.43	386063 38.23	178607 50.79	51851 41.67
Some change for better	1616466 28.19	1141756 26.88	337678 33.44	98731 28.07	38301 30.78
Large change for better	337056 5.88	231075 5.44	66308 6.56	29317 8.33	10356 8.32
No response	133964 2.34	99709 2.35	25543 2.53	5334 1.52	3378 2.72

Table 5.10

Pupil's change in behavior regarding relationships with adults (during 1968-69 school year) and by pupil participation in special academic programs during regular school year with percents by column

Change in pupil's behavior regarding relationships with adults	Totals	Pupil participation in special academic programs during regular school year			
		No. partic. in special program	Partic. in disadvantaged program	Partic. in enrichment program	Both disadv. and enrichment programs
	5733975	4248019	1009845	351676	124435
Some change for worse	92790 1.62	68084 1.60	19183 1.90	4197 1.19	1326 1.07
No change but change desirable	634587 11.07	453851 10.69	133989 13.27	30286 8.61	16461 13.23
No change but change not needed	2784195 48.55	2164906 50.96	392109 38.83	176000 50.05	51180 41.13
Some change for better	1580922 27.57	1110234 26.14	337107 33.38	93224 26.51	40357 32.43
Large change for better	331405 5.78	232432 5.47	63868 6.32	27666 7.87	7439 5.98
No response	310076 5.41	218512 5.14	63589 6.30	20303 5.77	7672 6.16

Table 5.11

Pupils classified by change in pupil's behavior regarding attentiveness (during 1968-69 school year) and by pupil participation in special academic programs during regular school year with percents by column

Change in pupil's behavior regarding attentiveness	Totals	Pupil participation in special academic programs during regular school year			
		No. partic. in special program	Partic. in disadvantaged program	Partic. in enrichment program	Both disadv. and enrichment programs
	5733977	4248018	1009846	351675	124438
Some change for worse	198600 3.46	147026 3.48	39030 3.86	8260 2.35	3384 2.72
No change but change desirable	1102257 19.22	764145 17.99	267873 26.53	40932 11.64	29307 23.55
No change but change not needed	1818695 31.72	1477716 34.79	165231 16.36	145388 41.34	30360 24.40
Some change for better	2036639 35.52	1441319 33.93	433203 42.90	116785 33.21	45332 36.43
Large change for better	446114 7.78	320829 7.55	78252 7.75	34348 9.77	12685 10.19
No response	131672 2.30	96083 2.26	26257 2.60	5962 1.69	3370 2.71

Table 5.12

Pupils classified by change in pupil's performance regarding completing assignments (during 1968-69 school year) and by pupil participation in special academic programs during regular school year with percents by column

Change in pupil's performance regarding completing assigns.	**Totals**	**Pupil participation in special academic programs during regular school year**			
		No. partic. in special program	**Partic. in disadvantaged program**	**Partic. in enrichment program**	**Both disadv. and enrichment programs**
	5733974	4248019	1009846	351677	124432
Some change for worse	147903 2.58	105874 2.49	32982 3.27	5990 1.70	3057 2.46
No change but change desirable	970121 16.92	674231 15.87	234302 23.20	36748 10.45	24840 19.96
No change but change not needed	1982703 34.58	1608180 37.86	186769 18.49	157354 44.74	30400 24.43
Some change for better	1989176 34.69	1397590 32.90	430937 42.67	110132 31.32	59517 40.60
Large change for better	515492 8.99	369542 8.70	96838 9.59	37139 10.56	12063 9.69
No response	128579 2.24	92692 2.18	28018 2.78	4314 1.23	3555 2.86

Table 5.13

Pupils classified by change in pupil's behavior regarding disruptive behavior (during 1968-69 school year) and by pupil participation in special academic programs during regular school year with percents by column

Change in pupil's behavior regarding disruptive behavior	Totals	Pupil participation in special academic programs during regular school year			
		No. partic. in special program	Partic. in disadvantaged program	Partic. in enrichment program	Both disadv. and enrichment programs
	5733974	4248021	1009844	351675	124434
Some change for worse	271932 4.74	201773 4.75	51903 5.14	11452 3.26	6804 5.47
No change but change desirable	719467 12.55	516034 12.15	156230 15.47	32210 9.16	14993 12.05
No change but change not needed	3119553 54.51	2387415 56.20	456721 45.23	216397 61.53	59020 47.43
Some change for better	1138106 19.85	785250 18.49	253668 25.12	66989 19.05	32199 25.88
Large change for better	199169 3.47	144607 3.40	38322 3.79	11320 3.22	4920 3.95
No response	285747 4.98	212942 5.01	53000 5.25	13307 3.78	6498 5.22

Table 5.14

Pupils classified by change in pupil's behavior regarding care in handling property (during 1968-69 school year) and by pupil participation in special academic programs during refular school year with percents by column

Change in pupil's behavior regarding care in handling school property	Totals	Pupil participation in special academic programs during regular school year			
		No. partic. in special program	Partic. in disadvantaged program	Partic. in enrichment program	Both disadv. and enrichment programs
	5733974	4248018	1009845	351677	124434
Some change for worse	61519 1.07	45789 1.08	13148 1.30	938 0.27	1644 1.32
No change but change desirable	650589 11.35	469712 11.06	137935 13.66	26487 7.53	16455 13.22
No change but change not needed	3322569 57.94	2567164 60.43	467409 46.29	222722 63.33	65274 52.46
Some change for better	1303122 22.73	890782 20.97	304016 30.10	78372 22.28	29952 24.07
Large change for better	243252 4.24	167373 3.94	51320 5.08	17010 4.84	7549 6.07
No response	152923 2.67	107198 2.52	36017 3.57	6148 1.75	3560 2.86

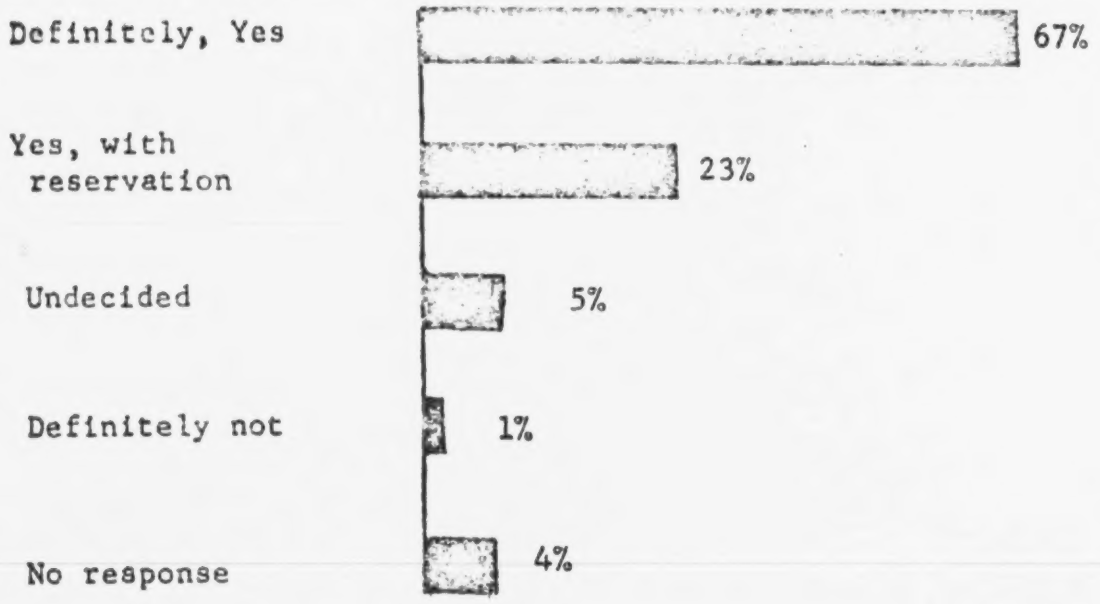
completing assignments, disruptive behavior, and care in handling property. Detailed data on these aspects of personal and social growth appear in Tables 5.9-5.14.

Teachers' Judgments of the Worth of Compensatory Education Programs

Teachers' satisfactions with compensatory programs are important outcomes. Though it is probably too much to hope that in the short run teachers' attitudes will be related to improved pupil performance (analyses of reading test gain scores revealed that improved performance in academic programs for the disadvantaged could not be attributed to teachers' satisfactions with the programs), in the long run teachers' attitudes may reflect improved morale which could lead to greater stability in the profession and improved instruction. Moreover, teachers' opinions about the worth of compensatory programs could reflect benefits to pupils to which standardized achievement tests were not sensitive. On both counts, teachers' satisfactions and complaints help round out the picture of the operations and benefits of compensatory programs.

Teachers were asked "Do you think that providing programs for the academically disadvantaged is generally worthwhile?" Their responses were of five types, which are depicted below along with the results.

"Do you think that providing programs for the academically disadvantaged is generally worthwhile?"*



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*Data are the percents of the 215,995 teachers who chose each response to the question.

Ninety percent of the teachers reported unqualified or qualified support of the general worth of compensatory programs for the academically disadvantaged. Only one teacher in one hundred felt that such programs were definitely not worthwhile. Few educational programs are as enthusiastically endorsed by teachers as compensatory programs for the disadvantaged. It is difficult to determine to which elements of compensatory programs the teachers were responding. However, their general feelings were clearly positive and supportive.

Chapter VI

Summary

In this report, the results of analyses of data collected in the 1969 Survey of Compensatory Education are presented. These data analyses bear on the evaluation of the operations and impact of Title I programs in 9,236 school districts and 32,719 elementary schools, involving 215,995 teachers of 5,733,976 pupils in grades two, four and six. The data analyses are organized around four general questions about compensatory education programs in Title I elementary schools during the 1968-69 school year.

1. In what context of families, schools, and communities were compensatory education programs conducted?
2. What was the extent of the needs for compensatory education programs and how did these needs vary with such factors as pupil's ethnic-group membership, urbanism of school, etc?
3. How efficient and sensible was the process of allocation of resources for compensatory education programs? Were Title I funds and participation in compensatory education programs allocated to the schools, teachers and pupils with the greatest need for such programs?
4. What impact did compensatory education programs have? What were the outcomes of such programs in terms of pupils' performance on standardized achievement tests, teachers' ratings of pupils' academic personal, and social growth, and teachers' general satisfaction with compensatory programs?

The Context of Compensatory Education Programs

1. Of the nearly 12,000,000 pupils in grades 1-6 of Title I elementary schools, approximately 50 percent attended rural schools, 23 percent attended urban schools and 22 percent attended suburban elementary schools.
2. The 12,000,000 pupils in grades 1-6 in Title I elementary schools during the 1968-69 school year were distributed across the principal ethnic groups approximately as follows:

    a. white -- 8,000,000 (70 percent)
    b. Negro -- 2,600,000 (23 percent)
    c. Spanish-surnamed -- 600,000 (6 percent)

3. The 216,000 Title I elementary school teachers in grades two, four, and six during the 1968-69 school year were distributed across the principal ethnic groups as follows:
    a. white -- 81 percent
    b. Negro -- 16 percent
    c. Spanish-surnamed -- 0.75 percent
4. Separation of ethnic groups was prevalent among Title I elementary schools in 1968-69. Seventy-one percent of the Negro pupils were in classrooms which were 91-100 percent Negro. Twenty-two percent of all Spanish-surnamed pupils were in classrooms which were 91-100 percent Spanish-surnamed.
5. In the opinion of their teachers, approximately 2,050,000 pupils (about one-in-six) in grades 1-6 of Title I elementary schools will not complete high school. Approximately 40 percent of all children of agricultural migrant families (of which there were over 200,000 such elementary-school pupils during the 1968-69 school year) were not expected by their teachers to complete high school.
6. Nearly 40 percent of Title I elementary school pupils in 1968-69 came from families in which the head of the household had not completed high school.
7. One-quarter (approximately 3,000,000) of the Title I elementary school pupils came from families in which the per family member income was less than $300. Over one million (1,100,000) pupils in grades 1-6, approximately 10 percent , came from families on welfare (AFDC).
8. Of the more than 600,000 Title I elementary school pupils who were poor (gross family income below $3000) and were considered to be potential dropouts, 53 percent were Negro, 35 percent were white, and 10 percent were Spanish-surnamed.
9. More than one-in-three Title I elementary school pupils did not attend Kindergarten.
10. Teachers with less than three years experience made up approximately

18 percent of all Title I elementary school teachers; however, such teachers represented 39 percent of the teachers of classrooms in which more than 20 percent of the pupils were from families on welfare.

11. Fifty-four percent (54%) of the teachers in the Survey had not received any formal training in teaching the academically disadvantaged prior to the 1968-69 school year.
12. Thirty-seven percent (37%) of the Title I elementary schools were not offering special classes for the retarded or handicapped during 1968-69.

Needs for Compensatory Education

1. The greatest incidence of an academic need was for compensatory reading programs. Nearly 2.5 million pupils in Title I elementary schools were in need of compensatory reading programs in the judgment of their teachers. Urban schools showed the greatest incidence of such need. The incidence of a critical need for compensatory reading instruction decreased slightly from grade two to grade six, although--as was observed in analyses in Chapter III--the extent of reading deficiencies was greater at the later grades.
2. The need for compensatory reading and language programs was particularly acute for Spanish-surnamed pupils, perhaps because of difficulties caused by their bilingual backgrounds.
3. There was a strong relationship between pupils' ethnic group and their need for compensatory academic programs:

   52 percent of all Negro pupils had a critical need in math;
   60 percent of all Negro pupils had a critical need in reading;
   57 percent of all Negro pupils had a critical need in language;

   Negro pupils consistently showed a greater incidence of need for compensatory programs than any other ethnic group. Only 14 percent of the Negro pupils in second grade had no critical need in the opinion of their teachers.
4. Nearly 25 percent of all American Indian sixth-grade pupils were judged to have a critical need for psychological services, this percent being nearly twice as large as the corresponding percent for

any other ethnic group at any other grade level.

5. The incidence of critical needs for compensatory programs proved to be related to pupils' ethnic-group membership, income level of the family, urbanism of the pupils' school, whether or not the pupil's family was receiving welfare, whether or not the pupil attended Kindergarten, the concentration of pupils of one ethnic group in the classroom, and the ethnic-group membership of the teacher.
6. The incidence of critical needs for compensatory programs was not related to the age of the school building, rate of absenteeism for the school, or mobility of the student population.

Allocation of Resources for Compensatory Education

1. Although the national average allocation of Title I funds was $156.90 per poor child in 1968-69, high-expenditure districts (those regularly spending more than $625 per pupil for normal schooling) received an average of $257 per poor child, moderate-expenditure districts ($425-$625 regular per pupil expenditure) received $142, and low-expenditure (less than $425 regular per pupil expenditure) districts received $149 per poor child.
2. High-expenditure districts received 16 percent of all Title I funds allocated in 1968-69, although they enrolled only 10 percent of the resident poor children.
3. High-expenditure districts received an average of $226 in Title I funds for each compensatory education program participant. The comparable figures for moderate and low expenditure districts were $174 and $108 per program participant, respectively.
4. Approximately 20 percent of the pupils in grades two, four and six in Title I elementary schools participated in one or more academic program for the disadvantaged. Thus, it is estimated that over two and one-quarter million pupils in grades one through six participated in at least one academic program for the disadvantaged during the 1968-69 school year. Among the

group of participants which constituted 20 percent of the population of pupils, 12 percent participated in one program, 3.5 percent in two programs and 4.5 percent in three academic programs for the disadvantaged during the school year.

Approximately one-third of the participating pupils received less than 100 hours of instruction in academic programs for the disadvantaged during the 1968-69 school year. The other two-thirds of the participants -- each group constituting six and one-quarter percent of all pupils in grades two, four, and six -- were equally divided between "100-199 hours instruction" and "over 200 hours instruction" in academic programs for the disadvantaged.

5. Approximately 17 percent of the Title I elementary schools reporting the relevant data revealed a larger percentage of pupils participating in academic programs for the disadvantaged than the percentage of pupils in the school reading only one year or more below grade level.
6. Among all Title I elementary schools, 68 percent (approximately 7,800,000) of the students in grades 1-6 participated in some type of program (academic or ancillary) for the disadvantaged during the 1968-69 school year.
7. In nearly all respects in which pupils' needs for compensatory education could be measured, there was observed a tendency for participation in compensatory programs of all types to be allocated to the pupils in greater need of such programs. However, the extent of allocation of participation in compensatory programs to pupils not in obvious need was distressingly great. For example, where as 114,750 pupils classified as "poor and potential dropouts" participated in some academic compensatory program during the 1968-69 school year (this number represents 36 percent of all pupils so classified), over 240,000 of the pupils (9,77%) classified as "not poor and not potential dropouts" also participated in a compensatory academic program during the school year.
8. Participation in ancillary compensatory programs appeared not to be as accurately focused on pupils in need of such services as was participation in academic compensatory programs.

For example, 68 percent of the 200,000 pupils in grades two, four and six in Title I schools who came from families with a per member income of $2,600-2,899 participated in one or more ancillary compensatory program; 73 percent of the 500,000 pupils in grades two, four and six who came from families with a per member income of $200-499 participated in one or more ancillary compensatory program.

9. In general, less than 15 percent of the pupils in Title I elementary schools received more than 100 hours instruction in academic programs for the disadvantaged during the 1968-69 school year. Approximately 30 percent of over 300,000 pupils in grades two, four and six classified as "poor and potential dropouts" received more than 100 hours instruction in academic programs for the disadvantaged during the 1968-69 school year.

10. In nearly all respects in which pupils' needs for compensatory education could be measured, there was observed a positive relationship between number of hours participation in academic disadvantaged programs and pupils' needs for compensatory schooling.

11. The principal manner in which academic programs for the disadvantaged differed from regular academic programs was that the former tended to make greater use of reading instruction in subgroups of the classroom or with individual pupils. However, one-teacher "instructional teams" were employed at a slightly higher rate in disadvantaged classes than in regular classes.

12. Curriculum emphasis (e.g. topic-centered, skills-centered, activity-centered) did not differ greatly between regular and disadvantaged academic programs. For example, 15.42 percent of teachers of regular classes reported using a topic-centered emphasis in reading instruction; the comparable percent for teachers of disadvantaged classes was 15.66 percent. Of teachers of regular reading classes, 15.06 percent reported using a skills-centered approach; the comparable percent for teachers of disadvantaged classes was 16.08 percent.

13. Nearly 50 percent of the teachers of disadvantaged classes received more than one hour of training for teaching the

academically disadvantaged during 1968-69.

14. In nearly all respects in which a school or school district's need for compensatory education was measured, there was found to be a positive relationship between that need and the incidence and extensiveness of training teachers to teach disadvantaged pupils.

15. Thirty-nine percent (39%) of the Title I school districts in the Survey had Citizens' Advisory Committees. A greater percentage of the larger districts had committees than the smaller districts. Results demonstrate that 91 percent of the districts with committees complied with the intent of the legislation and had at least one member who was the parent of a Title I pupil. The majority of districts with committees had at least one member from each group of personnel that should be represented on a committee.

16. Approximately 11 percent of all districts represented by the Survey did not have any programs for involving parents in the educational process.

17. Section 106 (11) of Public Law 90-247 requires that education aides be trained with the professional staff whom they will be assisting. This seems to be the legal requirement which Title I programs have most frequently failed to meet. In 41 percent of the districts with enrollments greater than 300 parents were used as aides in Title I projects; only 9 percent of the districts provided the necessary joint training for parent-aide and teachers.

Impact of Compensatory Education Programs on Pupil Behavior

Analyses of the outcomes of compensatory education programs drew upon two sources of data: 1) reports of performance on standardized reading achievement tests, 2) teachers' ratings of pupils growth in academic and social skills and attitudes and interests.

Summary of Reading Gain-Score Analyses. Only in reading were sufficient data available to assess gains on standardized achievement tests as an indication of the impact of compensatory education programs. Results of the reading gain-score analyses make up the greater part of data bearing upon academic outcomes to be evaluated. In general, the following conclusions can be drawn from these data:

1. Participants in reading programs for the disavantaged had lower pretest and posttest scores than nonparticipants. It would appear that compensatory programs were indeed reaching those who needed special help in reading.
2. Negative gain-scores for most "participating" groups in all grades seem to indicate that even when a lower "starting point" is considered, participants progressed at a slower rate than nonparticipants.
3. For nonparticipating pupils, progress in reading achievement, generally kept pace with their advancement in years of schooling, i.e., at the end of one year's school experience they had gained one or more grade-equivalents in reading achievement on the average. This was not true for most participants in compensatory reading programs. Perhaps evaluation of the progress of those who have environmental and other types of disadvantagement should not be compared with those who are not characterized by these handicaps, but compared only with pupils like themselves who are not receiving compensatory programs. (Such comparisons were not possible within the survey data.) Rate of learning, motivation, etc. would in this case by largely equitable, and program impact more validly discerned.
4. Increasing the number of hours spent by pupils in remedial reading, at least within the limits represented by on-going programs reported in the 1969 Survey did not reverse the losses suffered by participants.

In general and for whatever reasons, compensatory reading programs did not yield evidence in terms of performance on standardized reading tests that the reading deficiencies of participants had been overcome.

When these results are considered it is necessary to keep in mind that nonparticipants in compensatory education programs were unlike participants in many ways. They were less socially-disadvantaged; their parents generally had more education and held different occupational positions, and they were generally made up of pupils other than those who were Negro or Spanish-surnamed. Only students pre-scores on reading achievement tests were statistically equated so that gains could be compared at whatever level of achievement they occurred. There are many factors on which these groups differed, any one of which might be expected to be related to learning rate, as well as ability. Unfortunately, adequate measures of these other possible equating variables were not available in the survey data. Participants and nonparticipants in compensatory reading programs can not be considered to be comparable groups for achievement comparisons.

Summary of Teachers' Judgment of Pupils' Growth. Teachers' ratings of pupils' growth in basic academic skills were found to be at odds with the available data from standardized testing. Teachers reported nearly a 10 percent greater rate of some or large improvements in reading proficiency for participants in disadvantaged academic programs than for nonparticipants. Similar patterns of more frequent improvement for participants than for nonparticipants were reported with respect to the basic academic skills of understanding written instructions and of understanding oral instructions. No marked superiority of participants over nonparticipants was observed in the rates of improvement in math proficiency or independence of learning.

Two considerations bear on the problem of resolving the discrepancy between the results on reading performance as measured by standardized tests and as measured by teacher ratings: 1) standardized test data permitting measurement of gains in reading were available for only a small, unrepresentative sample of pupils; 2) teacher ratings can sometimes be subjective and influenced by desired outcomes.

Desired growth in personal and social behavior was judged to be substantially (about 10%) more frequent among participants in disadvantaged academic programs than among nonparticipants on six characteristics: relationship with other pupils, relationships with adults, attentiveness, completing assignments, disruptive behavior, and care in handling property.

Teachers reported being highly supportive of compensatory programs for the academically disadvantaged. Two-thirds of the teachers felt that such programs for the disadvantaged were "definitely worthwhile." Another one-quarter of the teachers regarded the programs as "generally worthwhile, but with reservations." Thus, 90 percent of the teachers in the Survey regarded compensatory programs for the academically disadvantaged as generally worthwhile.

Appendix A

Questionnaires for the 1969 Survey of Compensatory Education

Appendix B

Methodology of the 1969 Survey of Compensatory Education

Appendix C

(Bound separately)

Supplementary Data Analyses

Appendix A

Questionnaires for the 1969 Survey of Compensatory Education

The questionnaires used to gather data in the 1969 Survey of Compensatory Education are reproduced on the following pages of this appendix. The questionnaires are of four types: (1) a Pupil Questionnaire with which data on pupils was solicited from teachers; (2) a Teacher Questionnaire filled out by teachers and yielding data on teachers, the curriculum of their classes and characteristics of the pupils aggregated to the class level (e.g., "What percentage of the pupils in your class are reading below grade level?"); (3) a Principal Questionnaire yielding data on the organization, facilities, etc. of the school and characteristics of the pupils aggregated to the school level; (4) a District Questionnaire sent to the school superintendent and yielding data on the school district policies of administering Title I of ESEA.

Completed questionnaires were optically scanned by machine and the data written on magnetic computer tapes by National Computer Systems. A tape record layout of the questionnaire data appeared as Technical Report No. 5 (February 1970) of the Data Analysis of the Compensatory Education Survey project of the Laboratory of Educational Research, University of Colorado.

Before data analyses could proceed, it was necessary to transform the computer tape record of the questionnaire data into meaningful observations of variables (e.g., a questionnaire code for family income and which members of the pupil's family lived with him had to be transformed into a measure of income per family member measured in dollars). The process by which questionnaire data were transformed into observations of variables (some 330 variables in all) was documented in Technical Report No. 3 (February 1970) of the Data Analysis of the Compensatory Education Survey project of the Laboratory of Educational Research, University of Colorado.

1969 SURVEY ON COMPENSATORY EDUCATION

BOB No. 51-R3745
Exp. Date 6 30 70

- USE ONLY BLACK LEAD PENCIL (No. 2½ OR SOFTER)
- MAKE HEAVY BLACK MARKS THAT FILL THE CIRCLE
- ERASE CLEANLY ANY ANSWER YOU WISH TO CHANGE
- MAKE NO STRAY MARKINGS OF ANY KIND

PUPIL QUESTIONNAIRE

TEACHER CODE NUMBER ☐☐☐☐☐☐☐☐☐☐

PUPIL CODE NUMBER ☐

CD | PC | FOR PROCESSING USE ONLY

I. GENERAL INFORMATION

1. What is this pupil's grade level? (Mark one)
   ○ 2 ○ 4 ○ 6 ○ Non-graded ○ Special class for mentally or physically handicapped.

2. What is this pupil's sex? ○ Male ○ Female

3. What are this pupil's month and year of birth?

   Blacken the appropriate circles for the month and for the last digit of the year for the 1950's or the 1960's.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	○	○	○	○	○	○	○	○	○	○	○	○

	0	1	2	3	4	5	6	7	8	9
195_	○	○	○	○	○	○	○	○	○	○
196_	○	○	○	○	○	○	○	○	○	○

(For questions 4 and 5, assume that the school year started in the Fall of 1968 and does not include a summer session.)

4. In what month of the 1968-69 school year did this pupil start class in this school?

AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
○	○	○	○	○	○	○	○	○	○	○

5. How many days has this pupil been absent since his first day of attendance in this school during the 1968-69 school year? Include all absences up to and including the day on which you complete this form. If necessary, obtain the information from your school's central office files. Estimate the number if attendance records are not kept.
   ○ No absence, skip to question 7
   ○ 1-5 days ○ 6-10 days ○ 11-15 days ○ 16-20 days ○ 21-30 days ○ 31-40 days ○ 41 days or more

6. In your opinion, were this pupil's absences due primarily to illness?
   ○ Yes ○ No ○ Don't know

7. Since the beginning of the first grade, how many different schools, including this school, has this pupil attended? (Do not include summer schools or schools that normally feed pupils to this school; include schools in this district and in other districts.)
   ○ 1 school ○ 2 schools ○ 3 schools ○ 4 or more schools ○ More than 1, but number unknown ○ Don't know

8. Should this pupil be classified as any of these?

	Yes	No
From an institution for neglected children	○	○
From an institution for delinquent children	○	○
From an agricultural migrant family	○	○

9. Which of the following school experiences did this pupil have before entering first grade?

	Yes	No	Don't know
Kindergarten	○	○	○
Pre-Kindergarten Programs (such as nursery school, Head Start)	○	○	○

II. PUPIL BACKGROUND INFORMATION

10. Is this pupil a member of any of the following national minority groups? (Racial or national origin groups which are a minority of the national population.)
    ○ Yes ○ No
    If yes, which one?
    ○ American Indian
    ○ Negro
    ○ Oriental
    ○ Spanish surnamed American (Persons of Cuban descent, Mexican descent, Puerto Rican descent, Spanish descent)

11. Is there a language other than English which is the primary language of this pupil's home?
    ○ Yes ○ No ○ Don't know

12. A. In the box below, please write the usual occupation of the head of this pupil's household, even though he or she may currently be unemployed. (The head of the household is the person who is the primary supporter of this pupil's family.) CONSULT PAGE 7 OF YOUR MANUAL FOR EXAMPLES.

Occupation: ____________________

On page 8 of your manual you will find an alphabetical list of occupations which are very common in the United States. Consult this list to find either the occupation you have written in the box above or a synonym for it. When you have found the appropriate occupation in the list, mark the three digit number which follows it in the boxes and on the grids to the right. ☞
If you cannot find an appropriate occupation in the list, mark and grid the number 999.

☐	☐	☐
○0	○0	○0
○1	○1	○1
○2	○2	○2
○3	○3	○3
○4	○4	○4
○5	○5	○5
○6	○6	○6
○7	○7	○7
○8	○8	○8
○9	○9	○9

12. B. Is this pupil's family receiving welfare payments or is the head of this pupil's household chronically unemployed? (Mark all that apply.)
    ○ No
    ○ Yes, family receives welfare payments
    ○ Yes, head of household is chronically unemployed.

13. A. What is your best estimate of the gross yearly income (total income from all sources before any deductions) of this pupil's family? CONSULT PAGE 10 OF YOUR MANUAL FOR EXAMPLES.
    ○ Under $3,000 ○ $3,000-$4,500 ○ $4,501-$6,000 ○ $6,001-$7,500 ○ $7,501-$9,000 ○ Over $9,000

13. B. What was the main source of the information you have provided on this pupil's family income?
    ○ School records ○ Asked parent or pupil ○ Previously acquired knowledge ○ Best estimate

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14. A. What is the relationship of the head of this pupil's household to this pupil?

Father	Mother	Uncle	Aunt	Grandparent	Older brother or sister	Other	Don't know
○	○	○	○	○	○	○	○

14. B. Is the head of this pupil's household employed?

○ Yes ○ No ○ Don't know

15. Indicate below the educational levels of the head of this pupil's household and this pupil's mother. Blacken one circle in each column below.

HEAD OF HOUSEHOLD	MOTHER	
○	○	Little or no education
○	○	Probably completed grade school
○	○	Probably some high school
○	○	Probably completed high school
○	○	Probably some post high school training or college
○	○	Probably completed college (obtained Bachelor's degree)
○	○	Probably some graduate school education
○	○	Don't know

16. Is this pupil's mother employed?

- ○ Mother is deceased no mother in the home
- ○ Yes, part-time, seasonal, or day work
- ○ Yes, full-time steady work
- ○ No
- ○ Don't know

17. Which of the following best describes the immediate area near this pupil's home? Please describe the immediate area in which the pupil lives rather than the total school attendance area, if there is a difference. SEE PAGE 10 OF YOUR MANUAL FOR DEFINITIONS.

- ○ Primarily residential
- ○ Residential and commercial industrial
- ○ Primarily rural, farm or open country
- ○ Don't know

18. Considering his present attitude, how far do you think this pupil will go in school? NOTE: Consider only this pupil's **attitude not financial or family problems.**

- ○ 8th grade or less
- ○ 9th grade or 10th grade
- ○ 11th or 12th grade, but not high school graduation
- ○ Graduate from high school
- ○ Enter college
- ○ Other post high school education

19. Considering his ability, how far do you think this pupil could go in school? NOTE: Ability refers to your observa**tion of the pupil's scholastic potential.**

- ○ 8th grade or less
- ○ 9th grade or 10th grade
- ○ 11th or 12th grade, but not high school graduation
- ○ Graduate from high school
- ○ Enter college
- ○ Other post high school education

20. In your opinion, which of the following statements best describes the educational aspirations which this pupil's parents hold for him?

- They want him to be one of the best in his class ..... ○
- They want him to be above average ..... ○
- They want him to be about average ..... ○
- They want him to pass this grade ..... ○
- They have little concern for their child's educational achievement ..... ○
- Don't know ..... ○

21. Have you had any communication with a parent or guardian of this pupil during the 1968-69 school year?

○ Yes ○ No

If you answered "Yes," blacken the appropriate circles below to indicate the occasion or initiator of the communication and the subject of the communication. (Mark all that apply):

	Subject of Communication		
	Pupil's Academic Progress	Pupil's Behavior	Other Subject
Meeting of a parent-teacher organization, school open house or meetings scheduled in accordance with school policy	○	○	○
Teacher initiated, other than meetings indicated above	○	○	○
Parent initiated, other than meetings indicated above	○	○	○

22. Looking ahead to the next school year for this pupil, which level of reading material will be most appropriate for him?

- ○ Material that is above grade level in difficulty
- ○ Material that is at grade level in difficulty
- ○ Material that is below grade level in difficulty

23. According to your knowledge of this pupil's critical needs, which of the following would you recommend that he participate in during the next school year? (Do not consider whether or not the program will be available next year. Mark all that apply.)

A program beyond the regular school program designed to assist pupils weak in.

- ○ Math
- ○ Reading
- ○ Language (The study of correct English usage. May include grammar, spelling, English expression, speaking, or writing.)

- ○ Cultural Program (A program to extend the pupil's knowledge of the world of the fine arts or music)
- ○ Health Program (instruction in personal hygiene, medical and dental examinations and or therapy)
- ○ Psychological Counseling Program
- ○ Special Educational Program (speech therapy, retarded, handicapped)
- ○ Food Program
- ○ Pupil has no critical needs

III. ACADEMIC PROGRAM PARTICIPATION INFORMATION

Your principal will provide you with a list of Programs for the Academically Disadvantaged and Academic Enrichment Programs in your elementary school. These programs demonstrate efforts beyond the regular programs available in your school and are designed to help weak or bright pupils in MATH, READING, and LANGUAGE; they extend beyond the usual grouping of students in the classroom. Check this list for programs at the grade level you teach. Pupils in your class may participate in one or more of these programs. When determining whether this pupil participates in a Program for the Academically Disadvantaged or in an Academic Enrichment Program, consult the programs on your principal's list. If this pupil participates in any of the programs on the list, complete the portions of questions 25-29 which correspond to the program of instruction (i.e. Programs for the Academically Disadvantaged or Academic Enrichment Programs) in which this pupil participates. If you feel that a program has been omitted from the list, consult your principal or appropriate specialist teachers.

Questions 24-29 deal with Regular School Programs, Programs for the Academically Disadvantaged, and Academic Enrichment Programs. These terms are defined for you here to help you answer the questions.

REGULAR PROGRAMS	PROGRAMS FOR THE ACADEMICALLY DISADVANTAGED	ACADEMIC ENRICHMENT PROGRAMS
The program generally available for all students in a grade designed to increase power in the basic skills such as Math, Reading, and Language.	Efforts beyond the regular school program designed to assist pupils weak in a particular subject area by providing them with additional or alternative instruction.	Efforts beyond the regular school program designed to extend the pupil's knowledge of Math, Reading, and Language; primarily intended for bright students who progress through grades at the same rate as others, but are given an enriched curriculum.

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24. Does this pupil participate in a REGULAR PROGRAM in the subject areas MATH, READING, and LANGUAGE? (Mark the appropriate circle below for each subject area.)

REGULAR PROGRAMS

	Yes	No
Math	○	○
Reading	○	○
Language	○	○

25. Please mark below the number of PROGRAMS FOR THE ACADEMICALLY DISADVANTAGED and ACADEMIC ENRICHMENT PROGRAMS in which this pupil participates, in each of the subject areas MATH, READING, and LANGUAGE. If this pupil does not participate in a program in a given subject area, mark "None." (Mark one circle for each type of program and each subject area.) CONSULT PAGE 10 OF YOUR MANUAL FOR EXAMPLES.

	PROGRAMS FOR THE ACADEMICALLY DISADVANTAGED			ACADEMIC ENRICHMENT PROGRAMS		
	Math	Reading	Language	Math	Reading	Language
None	○	○	○	○	○	○
One	○	○	○	○	○	○
Two or more	○	○	○	○	○	○

26. On what basis was this pupil placed in the following types of programs in the subject areas MATH, READING, and LANGUAGE. (Mark circles only for those areas which correspond to the programs in which this pupil participates. Mark all that apply for each subject area.)

	REGULAR PROGRAMS			PROGRAMS FOR THE ACADEMICALLY DISADVANTAGED			ACADEMIC ENRICHMENT PROGRAMS		
	Math	Reading	Language	Math	Reading	Language	Math	Reading	Language
Pupil's grades	○	○	○	○	○	○	○	○	○
Standardized achievement or intelligence test scores	○	○	○	○	○	○	○	○	○
Special needs (e.g., psychological or emotional problems, handicapped, language impediments)	○	○	○	○	○	○	○	○	○
Teacher judgement of pupil's needs	○	○	○	○	○	○	○	○	○
Pupil request	○	○	○	○	○	○	○	○	○
Parent request	○	○	○	○	○	○	○	○	○
Alphabetical assignment	○	○	○	○	○	○	○	○	○
Other basis	○	○	○	○	○	○	○	○	○

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27. For each of the program types and subject matter areas in which this pupil participates, blacken the circles below which indicate the average size of his Instructional Group and the size of his Instructional Team. SEE PAGE 11 OF YOUR MANUAL FOR EXAMPLES AND DEFINITIONS.

	REGULAR PROGRAMS			PROGRAMS FOR THE ACADEMICALLY DISADVANTAGED			ACADEMIC ENRICHMENT PROGRAMS		
	Math	Reading	Language	Math	Reading	Language	Math	Reading	Language
Average size of Instructional Group									
1	○	○	○	○	○	○	○	○	○
2-5	○	○	○	○	○	○	○	○	○
6-10	○	○	○	○	○	○	○	○	○
11-15	○	○	○	○	○	○	○	○	○
16-25	○	○	○	○	○	○	○	○	○
26-35	○	○	○	○	○	○	○	○	○
36-45	○	○	○	○	○	○	○	○	○
46 or more	○	○	○	○	○	○	○	○	○
Size of this pupil's Instructional Team									
1	○	○	○	○	○	○	○	○	○
2	○	○	○	○	○	○	○	○	○
3	○	○	○	○	○	○	○	○	○
4	○	○	○	○	○	○	○	○	○
5	○	○	○	○	○	○	○	○	○
6 or more	○	○	○	○	○	○	○	○	○

28. If this pupil participates in an ACADEMIC ENRICHMENT PROGRAM or in a PROGRAM FOR THE ACADEMICALLY DISADVANTAGED, please indicate the amount of his participation below. For _each_ subject area in which he participates, mark the appropriate circle for the number of minutes per instructional period, the number of instructional periods per week, and the number of weeks per year that he will participate during the 1968-69 school year. (Assume that the school year began in the Fall of 1968 and does not include a summer session. Mark all that apply.) SEE PAGE 14 OF YOUR MANUAL FOR EXAMPLES.

Instructional Period--The number of consecutive minutes spent in a particular subject area.

	PROGRAMS FOR THE ACADEMICALLY DISADVANTAGED			ACADEMIC ENRICHMENT PROGRAMS		
	Math	Reading	Language	Math	Reading	Language
Number of minutes per instructional period						
0-10	○	○	○	○	○	○
11-20	○	○	○	○	○	○
21-30	○	○	○	○	○	○
31-45	○	○	○	○	○	○
46-60	○	○	○	○	○	○
61-75	○	○	○	○	○	○
76-90	○	○	○	○	○	○
More than 90	○	○	○	○	○	○
Number of instructional periods per week						
One	○	○	○	○	○	○
2 or 3	○	○	○	○	○	○
4 or 5	○	○	○	○	○	○
6 or 7	○	○	○	○	○	○
8 or 9	○	○	○	○	○	○
10 or more	○	○	○	○	○	○
Number of weeks per year						
0-6	○	○	○	○	○	○
7-12	○	○	○	○	○	○
13-24	○	○	○	○	○	○
25-30	○	○	○	○	○	○
31 or more	○	○	○	○	○	○

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29. Listed below are various curriculum approaches or concepts which may be included in programs in MATH, READING or LANGUAGE. Please describe the PROGRAMS FOR THE ACADEMICALLY DISADVANTAGED and ACADEMIC ENRICHMENT PROGRAMS in which this pupil participates, (at any time during the 1968-69 school year) by indicating for EACH of these types of programs, for EACH of the subject areas MATH, READING, and LANGUAGE, the three or fewer approaches which have received the most emphasis and the three or fewer approaches which have received the least emphasis. Please consult appropriate teachers to secure this information if this pupil participates in programs outside your class. CONSULT PAGES 14-15 OF YOUR MANUAL FOR DEFINITIONS OF CURRICULUM APPROACHES AND CONCEPTS.

Describe emphasis given curriculum approaches only for program types and subject areas in which this pupil participates.

Curriculum Approaches or Concepts	PROGRAMS FOR THE ACADEMICALLY DISADVANTAGED		ACADEMIC ENRICHMENT PROGRAMS	
	Most Emphasis	Least Emphasis	Most Emphasis	Least Emphasis
MATH				
Vocabulary	○	○	○	○
NUMBER CONCEPTS	○	○	○	○
Writing Numbers	○	○	○	○
SYMBOLS AND RULES	○	○	○	○
VERBAL PROBLEM SOLVING	○	○	○	○
Equations	○	○	○	○
FUNDAMENTAL OPERATIONS	○	○	○	○
ABSTRACT COMPUTATIONS	○	○	○	○
READING				
PHONETIC ANALYSIS	○	○	○	○
STRUCTURAL ANALYSIS	○	○	○	○
CONTEXT CLUES	○	○	○	○
Vocabulary Development	○	○	○	○
Oral Reading	○	○	○	○
General Comprehension Skills	○	○	○	○
Work-Study Skills	○	○	○	○
LITERARY INTERPRETATION	○	○	○	○
CRITICAL READING	○	○	○	○
CREATIVE READING	○	○	○	○
LANGUAGE				
Writing	○	○	○	○
Speaking	○	○	○	○
Listening	○	○	○	○
Skills:				
Capitalization	○	○	○	○
Punctuation	○	○	○	○
Spelling	○	○	○	○
English Usage	○	○	○	○
Handwriting	○	○	○	○

IV. ANCILLARY PROGRAM PARTICIPATION INFORMATION

30. In what types of Cultural Enrichment Programs did this pupil participate during the 1968-69 school year? (Assume that the school year started in the Fall of 1968 and does not include a summer session. Mark all that apply.) Consult school records or appropriate special teachers if necessary. SEE PAGE 16 OF YOUR MANUAL.

○ Social Experiences in the Community
○ Nature Program
○ Arts Program
○ Science Program
○ Occupational Familiarization Program
○ Other cultural enrichment programs
○ No participation (Skip to item 32)
○ Don't know

31. Please estimate the total number of hours which this pupil spent in all Cultural Enrichment Programs during the 1968-69 school year. (Assume that the school year started in the Fall of 1968 and does not include a summer session.) SEE PAGE 16 OF YOUR MANUAL.

○ 5 hours or less
○ 6 to 10 hours
○ 11-30 hours
○ 31-50 hours
○ 51-100 hours
○ 101 hours or more

Health Programs

32. Has this pupil received help from a school program during the 1968-69 school year in the examination or correction of physical health problems of any kind? (e.g., teeth, eyesight, hearing, physical deformities.) (Assume that the school year started in the Fall of 1968 and does not include a summer session.)

○ Yes ○ No ○ Don't know
(If answer is "No" or "Don't Know" skip to item 34)

33. Which of the following services has your school health program provided for this pupil? (Mark all that apply).

○ Physical, dental or eye exams
○ Treatment or therapy
○ Other health service

Pupil Personnel Service Programs

34. During the 1968-69 school year, has this pupil participated in any programs (one or more) for treating social, emotional, or disciplinary problems? (e.g., individual counseling with a psychologist, group counseling, home visits by a social worker.) (Assume that the school year started in the Fall of 1968 and does not include a summer session.)

○ Yes ○ No

Food Programs

35. During the 1968-69 school year, has this pupil received free or reduced price food (at a price less than that charged most pupils in this school) in a school program? (Assume that the school year started in the Fall of 1968 and does not include a summer session.) (Mark all that apply)

○ No
○ Yes, breakfast
○ Yes, lunch
○ Yes, milk
○ Yes, snack
○ Don't know

Program Benefits

36. How much has this pupil benefited from participation in Ancillary Service programs during the 1968-69 school year? SEE PAGE 16 OF YOUR MANUAL FOR DEFINITION
- ○ Very much
- ○ A little
- ○ Not at all
- ○ Did not participate in any ancillary service programs
- ○ I don't know

V. SUMMER PROGRAMS

37. Did this pupil participate in any of the following kinds of academic summer programs during the Summer of 1968?

	Yes	No	Don't Know
Math	○	○	○
Reading	○	○	○
Language	○	○	○
Other Academic Programs	○	○	○

38. If you responded "yes" to any option in question 37, please mark the appropriate circles in the following table for the length and hours per week of each type of program in which this pupil participated. (Mark all that apply.)

	Length of Program in Weeks					Hours per Week				
Type of Program	1-3	4-5	6-7	8-9	10 or more	1-3	4-6	7-9	10-12	13 or more
Math	○	○	○	○	○	○	○	○	○	○
Reading	○	○	○	○	○	○	○	○	○	○
Language	○	○	○	○	○	○	○	○	○	○
Other Academic Program	○	○	○	○	○	○	○	○	○	○

39. In what types of Cultural Enrichment Programs did this pupil participate during the Summer of 1968? Consult school records or appropriate special teachers if necessary. (Mark all that apply.) SEE PAGE 16 OF YOUR MANUAL.
- ○ Social Experiences in the Community
- ○ Nature Program
- ○ Arts Program
- ○ Science Program
- ○ Occupational Familiarization Program
- ○ Other cultural enrichment programs
- ○ No participation (Skip to item 41)
- ○ Don't know

40. Please estimate the total number of hours which this pupil spent in Cultural Enrichment Programs during the Summer of 1968. SEE PAGE 16 OF YOUR MANUAL.
- ○ 5 hours or less
- ○ 6 to 10 hours
- ○ 11-30 hours
- ○ 31-50 hours
- ○ 51-100 hours
- ○ 101 hours or more
- ○ No basis for estimation

VI. PUPIL BEHAVIOR INFORMATION

41. Please indicate the change in this pupil's academic performance and behavior since you first became his teacher during the 1968-69 school year. Rate this pupil on each item listed to the right, taking into consideration how he performed when you first became his teacher this school year and how he performs now. (Assume that the school year started in the Fall of 1968 and does not include a summer session.) SEE PAGE 16 OF YOUR MANUAL FOR EXAMPLES.

	Large change for the better	Some change for the better	No change (change desirable)	No change (change not necessary)	Some change for the worse	Behavior not observed
Care in handling school property	○	○	○	○	○	○
Responsibility in completing class assignments	○	○	○	○	○	○
Attentiveness in class	○	○	○	○	○	○
Creativity	○	○	○	○	○	○
Relationships with adults	○	○	○	○	○	○
Relationships with other pupils	○	○	○	○	○	○
Amount of disruptive behavior	○	○	○	○	○	○
Understanding oral instructions	○	○	○	○	○	○
Understanding written instructions	○	○	○	○	○	○
Accuracy in self evaluation	○	○	○	○	○	○
Self concept	○	○	○	○	○	○
Dress habits	○	○	○	○	○	○
Anxiety	○	○	○	○	○	○
Attendance	○	○	○	○	○	○
Reading proficiency	○	○	○	○	○	○
Math proficiency	○	○	○	○	○	○
Oral expression	○	○	○	○	○	○
Awareness of current affairs	○	○	○	○	○	○
Educational aspirations	○	○	○	○	○	○
Liking for his teacher	○	○	○	○	○	○
Independent learning	○	○	○	○	○	○

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42 What per cent of his time in class does this pupil spend in each of the following activities? (The total should add to approximately 100%.)

	None	1-10%	11-20%	21-30%	31-50%	51-75%	76-90%	91-100%
Academic Work	○	○	○	○	○	○	○	○
Other Constructive Learning Activities	○	○	○	○	○	○	○	○
Disruptive Behavior	○	○	○	○	○	○	○	○
Other non constructive behavior	○	○	○	○	○	○	○	○

43 What degree of interest did this pupil show toward the academic activities (e.g., materials, course of study) of each of the subject areas MATH, READING, and LANGUAGE, during the 1968-69 school year (Assume that the school year started in the Fall of 1968 and does not include a summer session.)

	Total Disinterest	Little Interest	Moderate Interest	High Interest
Math	○	○	○	○
Reading	○	○	○	○
Language	○	○	○	○

44. If this pupil is given a difficult task to complete on his own without prescribed time limits, he usually:

○ Gives up without trying
○ Starts the problem, but gives up rapidly
○ Persists for some time, but does not complete the task
○ Completes the task that was assigned

45. During the following school years, did this pupil participate in any PROGRAMS FOR THE ACADEMICALLY DISADVANTAGED in the subject areas MATH, READING, or LANGUAGE? (Mark one circle for each year and subject area.)

School Year	Math	Reading	Language
1967-68			
Yes	○	○	○
No	○	○	○
Don't know	○	○	○
1966-67			
Yes	○	○	○
No	○	○	○
Don't know	○	○	○
1965-66			
Yes	○	○	○
No	○	○	○
Don't know	○	○	○

VII THIS PUPIL'S PERFORMANCE ON STANDARDIZED ACHIEVEMENT TESTS

46. Has a standardized achievement test battery been administered to this pupil since September 1967?

○ Yes ○ No (Skip to Section VIII, question 59)

BEFORE COMPLETING THE REMAINING QUESTIONS ON PRETEST RESULTS, CONSULT PAGE 17 OF YOUR MANUAL FOR INSTRUCTIONS ON THE PROPER SCORES TO BE RECORDED

Pretest Results

47 Has a standardized achievement test battery been administered to this pupil between September 1, 1967 and December 31, 1968?

○ Yes ○ No (Skip to question 53)

48 In what month and year was a pretest administered to this pupil?

				Year
○ Jan	○ Apr	○ July	○ Oct	○ 1967
○ Feb	○ May	○ Aug	○ Nov	○ 1968
○ Mar.	○ June	○ Sept	○ Dec.	

49 In the column to the right is a list of standardized achievement test batteries, including test levels and forms. Blacken a circle in the column headed "Pre-test" to indicate the test battery, level and form which was administered to this pupil as a pretest. If the test administered to this pupil is not included in the list, mark the circle for "Other test." Consult your principal or school counselor if necessary to determine the correct test level and form. SEE PAGE 18 OF YOUR MANUAL FOR INSTRUCTIONS

50 Have this pupil's test scores (for the test battery marked in 49 above) been reported to this school?

○ Yes ○ No

51. In the appropriate boxes below, write the available pre-test scores for this pupil. CAUTION: The scores must be only for the achievement test which you marked in 49 above, and only for the month and year you have indicated in 48 above.

Score Type

Subtest	Grade Equivalent	Percentile	Stanine	
READING				1
ARITHMETIC				2
LANGUAGE				3
COMPOSITE OR TOTAL				4

52. The test information which you have provided was obtained from: (Mark appropriate answer)

○ Tests regularly given to all pupils in this grade throughout this school system
○ Tests administered in relation to compensatory education

LIST OF STANDARDIZED ACHIEVEMENT TESTS

Alternate forms
Shown in Parentheses

Pretest		Post-Test
	California Achievement Tests	
○	Lower Primary (W or X)	○
○	Upper Primary (W or X)	○
○	Elementary (W, X, Y, or Z)	○
	Iowa Tests of Basic Skills	
○	(1, 2, 3 or 4)	○
	Metropolitan Achievement Tests	
○	Primary I (A AM, B BM, or C CM)	○
○	Primary II (A AM, B BM, or C CM)	○
○	Elementary (A AM, B BM, or C CM)	○
○	Intermediate (A AM, B BM, or C CM)	○
	SRA Achievement Series	
○	Grades 1-2 (C or D)	○
○	Grades 2-4 (C or D)	○
○	Grades 3-4 (C or D)	○
	Multi-level Edition	
○	Blue Level (Grades 4-6) (C or D)	○
○	Green Level (Grades 6-8) (C or D)	○
	Stanford Achievement Test	
○	Primary I (W, X, or Y)	○
○	Primary II (W, X, or Y)	○
○	Intermediate I (W, X, or Y)	○
○	Intermediate II (W, X, or Y)	○
	Gates MacGinitie Reading Test	
○	Primary A (1 or 2)	○
○	Primary B (1 or 2)	○
○	Primary C (1 or 2)	○
○	Other Test	○

Post-Test Results

53 Has a standardized achievement test battery been administered to this pupil since January 1, 1969?

○ Yes ○ No (Skip to section VII, question 59)

54. In what month was a post-test administered to this pupil?

○ January	○ May
○ February	○ June
○ March	○ July
○ April	

55 In the column to the left is a list of standardized achievement test batteries, including test levels and forms. Blacken a circle in the column headed "Post-test" to indicate the test battery, level and form which was administered to this pupil as a post test. If the test administered to this pupil is not included in the list, mark the circle for "Other test." Consult your principal or school counselor if necessary to determine the correct test level and form.

56 Have this pupil's test scores (for the test battery marked in 55 above) been reported to this school?

○ Yes ○ No

57. In the appropriate boxes below, write and grid the available post-test scores for this pupil. CAUTION: The scores must be only for the achievement test which you marked in 55 above and only for the month you have indicated in 54 above.

Score Type

Subtest	Grade Equivalent	Percentile	Stanine	
READING				1
ARITHMETIC				2
LANGUAGE				3
COMPOSITE OR TOTAL				4

58. The test information which you have provided was obtained from: (Mark appropriate answer)

○ Tests regularly given to all pupils in this grade throughout this school system
○ Tests administered in relation to compensatory education

1 2 3 4 DO NOT WRITE IN THIS SPACE 1 2 3 4

VIII SUPPLEMENTAL PUPIL INFORMATION

The following series of items ask a number of questions about this pupil and his family. As a result of your daily contacts with this pupil you may already have all of the information you need to answer each of the questions. If, however, you do not have all of the needed information, you may want to informally ask the pupil questions which will provide you with additional data.

59. Indicate below the people who live with this pupil in his house or apartment

Mother	○ Yes	○ No	○ Don't know
Grandmother	○ Yes	○ No	○ Don't know
Grandfather	○ Yes	○ No	○ Don't know

Number of brothers and sisters
○ Don't know ○ None ○ 1 ○ 2 ○ 3 ○ 4
○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 or more

Number of aunts and uncles
○ Don't know ○ None ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 or more

Number of others
○ Don't know ○ None ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 or more

60 Have this pupil's parents ever talked to him about going to college?

○ Yes ○ No ○ Don't know

61 Have this pupil's parents ever discussed occupational choices with him?

○ Yes ○ No ○ Don't know

62 Which of the following materials does this pupil read outside of school?

Comic books	○ Yes	○ No
Material for church or Sunday school	○ Yes	○ No
Newspapers, magazines	○ Yes	○ No
Books	○ Yes	○ No

63. Does this pupil or any of his brothers or sisters belong to groups such as the Cub Scouts, Boy Scouts, Brownies, Girl Scouts, Bluebirds, Campfire Girls?

○ Yes ○ No ○ Don't know

64 Does this pupil or any of his brothers or sisters take art, dancing, music, or singing lessons outside of the regular school program?

○ Yes ○ No ○ Don't know

65 Before this pupil started first grade did anyone in his family read to him or try to teach him some of the alphabet?

○ Yes ○ No ○ Don't know

66. Which would make the pupil's parents happier to hear?

○ He was doing very well in his school work (e.g., reading)
○ He was behaving very well during school

67 Which would make the pupil's parents more unhappy to hear?

○ He was doing very badly in his school work (e.g., reading)
○ He was acting very badly during school

68 What was the main source of the information you have provided in items 59 through 67?

○ School records
○ Pupil interview
○ Interview or discussion with parent
○ Previously acquired knowledge
○ Best estimate

BOB No. 51-R0743
Exp. date 6 30 70

Teacher Code Number: ____________________

School Name ____________________

1969 SURVEY ON
COMPENSATORY EDUCATION

[illegible]

DIRECTIONS: Your responses will be read by an automatic scanning device. Your careful observance of these few simple rules will be most appreciated.

Use only black lead pencil (No. 2½ or softer).
Make heavy black marks that fill the circle.
Erase cleanly any answer you wish to change.
Make no stray markings of any kind.

I. Teacher Background Information

1. What grade do you teach?
○ 2
○ 4
○ 6
○ Non graded (An instructional group that includes pupils who would, in a graded system, be in two or more different grades.)
○ Special class for mentally or physically handicapped

2. What is your sex?
○ Male
○ Female

3. How many years of full-time teaching experience (public and nonpublic), including this year, have you had?
○ One year or less
○ More than 1 year but less than 3 years
○ At least 3 years but less than 6 years
○ At least 6 years but less than 10 years
○ At least 10 years but less than 20 years
○ 20 years or more

4. How many years, including this year, have you taught in this school?
○ One year or less
○ More than 1 year but less than 3 years
○ At least 3 years but less than 6 years
○ At least 6 years but less than 10 years
○ At least 10 years but less than 20 years
○ 20 years or more

5. Do you reside within the attendance area or neighborhood of this school?
○ Yes
○ No

6. Are you a member of one of the national minority groups (Racial, or national origin groups which are a minority of the national population.) listed below?
○ Yes
○ No
If yes, please indicate which one:
○ American Indian
○ Negro
○ Oriental
○ Spanish-surnamed American (Persons of Cuban Descent, Mexican Descent, Puerto Rican Descent, Spanish Descent)

7. During the 1968-69 school year, how many days were you absent when school was in session? (Reasons for absence may include illness, teacher workshops, professional visitations, teacher strikes, etc.) (Assume that the school year started in the Fall of 1968 and does not include a summer session.) Note: This information will be used only for national evaluation purposes. Individual responses are kept anonymous.
○ Zero
○ 1 to 4 days
○ 5 to 8 days
○ 9 to 11 days
○ 12 or more days

8. Is your teaching at this elementary school this year a result of:
○ Personal choice, from among many alternative schools?
○ Personal choice, from among few alternative schools?
○ Assignment to this school, which is one of a number of elementary schools in this district?
○ Assignment to this school, which is the only elementary school in this district?

TURN TO PAGE 2 ➪

NCS-PR-200

9. Have you had formally organized training in the teaching of academically disadvantaged children? (Mark all that apply.)

Formally organized training has a prescribed plan of study or instruction. Examples include regular college courses (whether taken for credits or not), or institutes and programs sponsored by the school district, State Education Agency, professional teacher associations or the Federal government.

○ No formally organized training
○ In Service workshop or institute (formally organized educational training exclusive of regular college courses, which takes place after the teacher first enters the teaching profession)
○ One college course in-service
○ Several college courses in-service
○ One college course pre-service (formally organized training taken before entering a career in teaching)
○ Several college courses pre-service
○ As a student teacher in classes serving disadvantaged pupils
○ As a student aide in classes serving disadvantaged pupils
○ As a member of the Teacher Corps
○ Other formally organized training

10. For how many hours since June 1, 1968 have you participated in any formally organized in-service training or study (include college courses) concerned specifically with the education of academically disadvantaged pupils?

Formally organized in-service training is formally organized training and or college courses taken after the teacher first enters the teaching profession.

○ None at all
○ 1 - 4 hours
○ 5 - 20 hours
○ More than 20 hours

11. Have you participated in an in-service training program concerned with vocational guidance or occupational information for elementary pupils?

○ Yes
○ No

12. Please indicate below whether or not each of the following services has been provided to you since June, 1968. Indicate in column (1) those services which have not been provided to you. Indicate in column (2) those services which you know to have been provided by funds from Title I of the Elementary and Secondary Education Act (ESEA). Indicate in column (3) those services which you know to have been provided by funds from sources other than Title I and indicate in column (4) services which have been provided you, for which you do not know the source of funding. (Mark all that apply for each type of service.)

Services	**(1) Services which have not been provided**	**(2) Services provided by Title I funds**	**(3) Services provided by funds other than Title I**	**(4) Services provided, but don't know source of funds**
Classroom aides or assistants	○	○	○	○
Consultants, including school psychologists, reading specialists, etc	○	○	○	○
All or some part of tuition fees for college courses or summer institutes	○	○	○	○
Expenses for professional travel	○	○	○	○

13. How many Pupil Questionnaires are you completing for this survey? (Write this number in the box at the left of the grid and blacken the circle on the grid which corresponds to the number you wrote.)

☐ ⓪①②③④⑤⑥⑦⑧⑨

14. Are the pupils for whom you have supplied information on Pupil Questionnaires typical, in their academic performance, of most of the pupils you now teach?

○ Yes
○ No

II Class Characteristics and Organization

15 A How many pupils in your class come from families whose head of household is receiving welfare or is chronically unemployed? (Head of household is the person who is the primary supporter of the family.) Write the number in the boxes at the top of the grid and blacken the circles on the grid which correspond to the number you wrote. If you write a single digit number, use the right hand column only.

☐	☐
⓪	⓪
①	①
②	②
③	③
④	④
⑤	⑤
⑥	⑥
⑦	⑦
⑧	⑧
⑨	⑨

15 B What was the primary source of information you used in responding to question 15A. (Mark only one)

○ Pupil record files
○ Information supplied by pupils or parents
○ Personal knowledge
○ Best estimate
○ Other

16 What per cent of the pupils in your class are members of the following national minority groups? (Racial, or national origin groups which are a minority of the national population) (Blacken one circle in each line)

	None	1-10%	11-25%	26-50%	51-75%	76-90%	91-100%
American Indian	○	○	○	○	○	○	○
Negro	○	○	○	○	○	○	○
Oriental	○	○	○	○	○	○	○
Spanish surnamed American (Persons of Cuban descent, Mexican descent, Puerto Rican descent, or Spanish descent)	○	○	○	○	○	○	○

17. According to your own estimate, what per cent of the pupils in your class are performing below grade level in reading?

None	1-10%	11-25%	26-50%	51-75%	76-90%	91-100%
○	○	○	○	○	○	○

18. In the following questions you are asked to provide the total number of pupils who are members of your class on Oct. 1, 1968 and April 1, 1969. If the requested information is not recorded, please estimate as closely as you can. Do not give class membership figures for the first day of school. Give class membership either for October 1, 1968 or for a date a few weeks after your school year started when membership began to stabilize. For each question write a number in the box at the top of the grid and blacken the numbers on the grid which correspond to the number you wrote. If you record a single digit number, use the right hand column only. **SEE PAGE 24 OF YOUR MANUAL FOR EXAMPLES AND DEFINITIONS.**

a. How many pupils were members of your class on each of the two dates October 1, 1968 and April 1, 1969?

b. How many pupils became members of your class between October 1, 1968 and April 1, 1969?

c. How many pupils were removed from your class membership between October 1, 1968, and April 1, 1969?

(a)							
October 1, 1968		April 1, 1969		(b)		(c)	
☐	☐	☐	☐	☐	☐	☐	☐
⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
①	①	①	①	①	①	①	①
②	②	②	②	②	②	②	②
③	③	③	③	③	③	③	③
④	④	④	④	④	④	④	④
⑤	⑤	⑤	⑤	⑤	⑤	⑤	⑤
⑥	⑥	⑥	⑥	⑥	⑥	⑥	⑥
⑦	⑦	⑦	⑦	⑦	⑦	⑦	⑦
⑧	⑧	⑧	⑧	⑧	⑧	⑧	⑧
⑨	⑨	⑨	⑨	⑨	⑨	⑨	⑨

19. During the school year, how many teachers have held your particular teaching assignment with your class for at least two consecutive weeks?

○ None except myself
○ Myself and one other
○ Myself and two others
○ Myself and three others
○ Myself and more than three others

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20 What percent of the pupils in your class have participated in PROGRAMS FOR THE ACADEMICALLY DISADVANTAGED in the following subject areas during the 1968-69 school year? Assume that the school year started in the Fall of 1968 and does not include a summer session. In answering this question refer to the list of Programs for The Academically Disadvantaged provided by your principal.

Programs for the Academically Disadvantaged are efforts beyond the regular school program designed to assist pupils weak in a particular subject by providing additional or alternative instruction.

Subject Area	None	1-10%	11-25%	26-50%	51-75%	76-90%	91-100%
Math	○	○	○	○	○	○	○
Reading	○	○	○	○	○	○	○
Language	○	○	○	○	○	○	○
Other Academic Subjects	○	○	○	○	○	○	○

21 When do pupils in your class usually participate in PROGRAMS FOR THE ACADEMICALLY DISADVANTAGED during the 1968-69 school year? (Mark all that apply for each line.)

Subject Area	Before school, after school, weekends	During regular school day	Do not participate in this type of program
Math	○	○	○
Reading	○	○	○
Language	○	○	○
Other Academic Subjects	○	○	○

22 Listed below are several terms which describe ways classes may be organized. Mark "Yes" if the lettered statement describes your class and mark "No" if it does not. Be sure to mark a circle for each lettered statement.

	Yes	No
a. **One or more Specialist Teachers** (e.g., a teacher of music, art, reading, speech or physical education) comes in to assist me with my whole class	○	○
b. **No other teachers** come in to assist me with my whole class	○	○
c. I am assisted by one or more teacher aides (persons who assist the teacher on a regular or voluntary basis in a clerical or teaching capacity. This may include adults or students, but not elementary school students)	○	○
d. **Team Teaching**: one or more persons responsible for teaching the same subject to one group of students	○	○
e. **Pupils from my class and one or more other classes are ability grouped for one or more subjects**	○	○
f. **Tracking or ability grouping**: Pupils are assigned to my class by ability or achievement level	○	○
g. **Departmentalized**: I regularly meet with several classes each day to teach in a limited subject matter area	○	○
h. My class is a non-graded special class enrolling only mentally retarded pupils	○	○
i. **Non-graded**: My class is made up of pupils who would, in graded systems, be in two or more different grades	○	○

III Teaching Method

23 (Which of the following best describes the program of instruction in your class? (Mark only one) SEE PAGE 24 OF YOUR MANUAL.)

a ○ Regular Program--The program generally available for all students in a grade, designed to increase power in the basic skills such as READING, MATH, and LANGUAGE

b ○ Program for the Academically Disadvantaged--Efforts beyond the regular school program designed to assist pupils weak in a particular subject by providing them with additional or alternative instruction.

c ○ Academic Enrichment Program--Efforts beyond the regular school program designed to extend the pupils' knowledge of MATH, READING, and LANGUAGE; primarily intended for bright pupils who progress through the grades at the same rate as others, but are given an enriched curriculum.

24 If you marked "b" or "c" in question 23, please indicate the subject areas and programs in which you regularly teach. Consider only the 1968-69 school year. (Mark all that apply)

Language is the study of correct English usage, and may include grammar, spelling, English expression, speaking or writing.

	Math	Reading	Language
Programs for the Academically Disadvantaged	○	○	○
Enrichment Programs	○	○	○

IV. Program of Instruction in Your Class

General Instructions--Describe your classroom program of instruction by marking those items which apply.

25. How are pupils in your class grouped for instruction in Math, Reading, and Language? (Mark all that apply.)

	Math	Reading	Language
Total class as one group	○	○	○
Two groups	○	○	○
Three groups	○	○	○
More than three groups	○	○	○
Individualized	○	○	○
Subject not taught to this class	○	○	○

26. What are (a) the average number of minutes per INSTRUCTIONAL PERIOD, (b) number of instructional periods per week, and (c) number of weeks during the entire 1968-69 school year spent in instruction in your class in the subject areas MATH, READING, and LANGUAGE? Consider only the 1968-69 school year. (Assume that the school year started in the Fall of 1968 and does not include a summer session.) If a subject is not taught to your class, mark "Not Applicable" for that subject.

Instructional Period--The number of consecutive minutes spent in a particular subject area. See question 28 on page 14 of your manual and question 26 on page 24 of your manual for clarification.

	Math	Reading	Language
Not Applicable (Subject not taught to my class)	○	○	○

(Continued in next column)

26. Continued

a. Number of minutes per instructional period

	Math	Reading	Language
1-20	○	○	○
21-30	○	○	○
31-45	○	○	○
46-60	○	○	○
61-75	○	○	○
76-90	○	○	○
More than 90	○	○	○

b. Number of instructional periods per week

	Math	Reading	Language
One	○	○	○
2 or 3	○	○	○
4 or 5	○	○	○
6 or 7	○	○	○
8 or 9	○	○	○
10 or more	○	○	○

c. Number of weeks during the 1968-69 school year

	Math	Reading	Language
0	○	○	○
1-6	○	○	○
7-12	○	○	○
13-24	○	○	○
25-30	○	○	○
31 or more	○	○	○

27. Which of the following approaches would most often describe the presentation of material and information in your classroom? Even if you use many of these approaches, please mark the one that is primarily used in your teaching of each of the subject areas MATH, READING and LANGUAGE. CONSULT PAGE 25 OF YOUR MANUAL FOR DEFINITIONS BEFORE COMPLETING THIS QUESTION.

	Math	Reading	Language
TOPIC CENTERED (e.g., a specific reading lesson on Mars)	○	○	○
SUBJECT MATTER CENTERED (e.g., Emphasis placed directly upon a subject, such as English)	○	○	○
UNIT CENTERED (e.g., all reading activities over a period of time could center on the solar system	○	○	○
SKILLS CENTERED (e.g., multiplying two digit numbers)	○	○	○
ACTIVITY CENTERED (e.g., reading activities centered around a trip to the zoo)	○	○	○

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28. Listed below are various curriculum approaches or concepts which may be included in instruction of MATH, READING or LANGUAGE. Teachers often place more emphasis on some curriculum approaches than on others, depending upon their assessment of the needs of their class. Please indicate the emphasis you give these approaches in your teaching of MATH, READING, and LANGUAGE by marking for each subject area the three or fewer approaches receiving the most emphasis and the three or fewer approaches receiving the least emphasis. CONSULT PAGES 14-15 OF YOUR MANUAL FOR DEFINITIONS OF CURRICULUM APPROACHES AND CONCEPTS.

(Do not mark more than three in each column)

MATH	Most Emphasis	Least Emphasis
Vocabulary	○	○
NUMBER CONCEPTS	○	○
Writing Numbers	○	○
SYMBOLS & RULES	○	○
VERBAL PROBLEM SOLVING	○	○
Equations	○	○
FUNDAMENTAL OPERATIONS	○	○
ABSTRACT COMPUTATIONS	○	○

Continued on top right hand side of this page.

28 Continued

(Do not mark more than three in each column)

READING	Most Emphasis	Least Emphasis
PHONETIC ANALYSIS	○	○
STRUCTURAL ANALYSIS	○	○
CONTEXT CLUES	○	○
Vocabulary Devlopment	○	○
Oral Reading	○	○
General Comprehension Skills	○	○
Work-Study Skills	○	○
LITERARY INTERPRETATION	○	○
CRITICAL READING	○	○
CREATIVE READING	○	○

(Do not mark more than three in each column)

LANGUAGE	Most Emphasis	Least Emphasis
Writing	○	○
Speaking	○	○
Listening	○	○
Skills:		
Capitalization	○	○
Punctuation	○	○
Spelling	○	○
English Usage	○	○
Handwriting	○	○

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29. What responses would you require a pupil to give after he has read some given material or has been given some information by you? Place a mark in Column 1 for those responses you would most frequently require, a mark in Column 2 for those responses you would require less frequently but often, and a mark in Column 3 for those responses you do not require in your program. Mark one answer for each type of response for each of the subject areas MATH, READING, and LANGUAGE.

Responses Required	MATH			READING			LANGUAGE		
	(1) Frequently Require	(2) Sometimes Require	(3) Never Require	(1) Frequently Require	(2) Sometimes Require	(3) Never Require	(1) Frequently Require	(2) Sometimes Require	(3) Never Require
Restatement of the content in some form in order to indicate understanding	○	○	○	○	○	○	○	○	○
Explaining the meaning of the material or information	○	○	○	○	○	○	○	○	○
Extending the trends beyond the given data to determine implications for past or future situations	○	○	○	○	○	○	○	○	○
Using the given information in a particular and concrete situation	○	○	○	○	○	○	○	○	○
Breaking the material into its parts and determining relationships of the parts	○	○	○	○	○	○	○	○	○
Making judgments about the merit of the material or information	○	○	○	○	○	○	○	○	○

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30. What educational objectives do you emphasize most in your classroom? Mark no more than two for each of the subject areas MATH, READING, and LANGUAGE.

	Math	Reading	Language
Knowledge of Facts	○	○	○
Understanding Concepts and or Principles	○	○	○
Developing Skills	○	○	○
Developing Reasoning Ability	○	○	○
Building Attitudes	○	○	○
Application of Learning to Practical Situations	○	○	○

V. Teacher Concerns

31. Do you feel that the progress of your class is substantially hampered by differences in interest and ability among your pupils?

○ Yes
○ No

32. Do discipline problems make your teaching job particularly difficult this year?

○ Yes
○ No

33. How adequate were the equipment and materials available to you for use in your teaching during the 1968-69 school year? (Assume that the school year started in the Fall of 1968 and does not include a summer session.) Blacken one circle each for Equipment and Materials.

	Equipment	Materials
Completely inadequate	○	○
Somewhat inadequate	○	○
Undecided	○	○
Partially adequate	○	○
Totally adequate	○	○

34. How appropriate were the Equipment, Materials, and Curricula available to you for use in your teaching during the 1968-69 school year? Blacken one circle each for equipment, materials, and curricula.

	Equipment	Materials	Curricula
Completely inappropriate	○	○	○
Somewhat inappropriate	○	○	○
Undecided	○	○	○
Somewhat appropriate	○	○	○
Highly appropriate	○	○	○

35. Did you have any part in the choosing of the curricula you use in your classroom instruction?

○ Yes
○ No

36. Do you think that providing PROGRAMS FOR THE ACADEMICALLY DISADVANTAGED is generally worthwhile?

○ Definitely yes
○ Yes, with reservation
○ Undecided
○ Definitely not

37. Listed below are a number of activities which take place in classroom teaching. Please review the list of activities, and then mark on the accompanying scale the relative amount of time you devote to each activity in the course of your teaching. A mark in column 1 indicates little time devoted, a mark in column 5 indicates considerable time devoted, and marks in columns 2, 3, and 4 indicate intermediate amounts of time devoted. Your responses will be kept anonymous and will be used only for national studies.

Classroom Activities:	Little — 1	2	Some — 3	4	Much 5
Giving mild approval of pupil actions	○	○	○	○	○
Giving strong approval of pupil actions	○	○	○	○	○
Expanding, modifying, or elaborating upon pupil ideas	○	○	○	○	○
Asking questions of pupils	○	○	○	○	○
Giving directions to pupils	○	○	○	○	○
Giving mild disapproval of pupil actions	○	○	○	○	○
Giving strong disapproval of pupil actions	○	○	○	○	○
Listening to pupils	○	○	○	○	○

38. The items on the following page concern teacher opinions on various matters of teaching. There are no correct answers and no incorrect answers to these items. The purpose of the items is to gain information on your beliefs, and to use this information in planning future teacher in-service education programs. Your replies will be kept anonymous and will be used only for national studies. Please blacken one circle for each item to indicate the extent of your agreement or disagreement with the item.

	Strongly Agree	Agree Somewhat	Undecided	Disagree Somewhat	Strongly Disagree
Enlivening my lessons with stories, jokes, or personal anecdotes	○	○	○	○	○
Capturing the complete attention of my pupils	○	○	○	○	○
Having a pupil bring in information which contradicts something that I said	○	○	○	○	○
Permitting no infractions of discipline to go unnoticed	○	○	○	○	○
Following specific and carefully organized lesson plans	○	○	○	○	○
Being appreciated by my pupils for my sense of humor	○	○	○	○	○
Having children find flaws in what I said	○	○	○	○	○
Watching children progress quickly through reading material	○	○	○	○	○
Letting pupils choose their own projects, topics for themes, etc	○	○	○	○	○
Children have to be kept in their place or they will take too many liberties	○	○	○	○	○
Having my pupils do well on a test that I made	○	○	○	○	○
Spending a considerable amount of time in group discussions	○	○	○	○	○
Inviting pupils to question my decisions and express their own opinions	○	○	○	○	○
Running my class with a firm hand	○	○	○	○	○
A pupils' first need is for warmth and tenderness	○	○	○	○	○
Helping children with their personal problems	○	○	○	○	○
Being known as a colorful and stimulating teacher	○	○	○	○	○
Making sure pupils show proper respect for their teacher	○	○	○	○	○
Striving for a close, warm, protective relationship with his pupils is part of the teacher's job	○	○	○	○	○
Letting the pupils make their own decisions about classroom activities and procedures	○	○	○	○	○
Having the entire class do the same thing at the same time	○	○	○	○	○
Having pupils do over, papers that are not neat	○	○	○	○	○
Having pupils confide in me as they would a parent	○	○	○	○	○

Principal Code No: ____________________

School: ____________________

School District ____________________

BOB No. 51-R0744
Exp. Date 6 30 70

1969 SURVEY ON
COMPENSATORY EDUCATION

[illegible]

I. GENERAL SCHOOL INFORMATION

1. Please record below the attendance, membership and participation data requested for your school: The terms Average Daily Attendance, Average Daily Membership 1968-69 School Year and Programs for the Academically Disadvantaged are defined here for your use in Question 1.

   A. Average Daily Attendance (ADA)--The total of the number of pupils present at a given school on each of the days during the stated reporting period divided by the number of days school is in session during this period. Only days on which the pupils are under the guidance and direction of teachers should be considered as days in session.

   B. Average Daily Membership (ADM)--The total of the number of pupils in the membership of a given school on each of the days during a stated reporting period divided by the number of days that school is in session during this period. Only days on which the pupils are under the guidance and direction of teachers should be considered as days in session.

   C. 1968-69 School Year--Assume that the 1968-69 school year started in the Fall of 1968 and does not include a summer session.

   D. Programs for the Academically Disadvantaged--Efforts beyond the regular school program designed to assist pupils who are weak in a particular subject by providing them with additional or alternative instruction.

SEE PAGE 8 OF YOUR MANUAL FOR CLARIFICATION OF THIS QUESTION.

Attendance, Membership and Participation Information	Total for all grades in this school	Total for grades			
		Pre-K & K	2	4	6
a. Average Daily Attendance for November, 1968					
b. Average Daily Membership for November, 1968					
c. Unduplicated count of Public School Pupils participating in Programs for the Academically Disadvantaged during the 1968-69 school year.					
d. Unduplicated count of Public and Non-Public School Pupils participating in Programs for the Academically Disadvantaged during the 1968-69 school year.					

2. How many pupils were added to the membership of grades pre-kindergarten through 6, and all grades in this school between October 1, 1968, and March 31, 1969? (Do not give initial school membership; report additions to school membership after the 1968-69 school year began.)

   Grades Pre-Kindergarten - 6 ____________________ All grades in this school ____________________

3. How many pupils withdrew or transferred from grades pre-kindergarten through 6, and all grades in this school between October 1, 1968, and March 31, 1969?

   Grades Pre-Kindergarten - 6 ____________________ All grades in this school ____________________

4. Which grade levels are taught in this school? (Mark all that apply.)

○ Pre-Kindergarten
○ Kindergarten

○ 1 ○ 3 ○ 5 ○ 7 ○ 9 ○ 11
○ 2 ○ 4 ○ 6 ○ 8 ○ 10 ○ 12

○ Special classes for mentally retarded or physically handicapped.

○ Non-graded - an instructional group that includes pupils who would, in a graded system, be in two or more different grades.

5. Does this school have mid-year promotions for pupils in grades 2, 4, or 6 or their equivalent? (Mark all that apply.)

Grade 2	○ No	○ Yes
Grade 4	○ No	○ Yes
Grade 6	○ No	○ Yes

6. How old is the main classroom building of your school plant?

○ Less than 1 year old
○ 1-4 years
○ 5-9 years
○ 10-19 years
○ 20-29 years
○ 30-39 years
○ 40 years or older

7. Indicate below the number of the following types of personnel available to pupils in your school. Indicate the number of personnel available full time to pupils in your school in column 1, the number of personnel available part-time to pupils in your school in column 2, and the total hours per week that part-time personnel of each type are available to pupils in your school, in column 3.

SEE PAGE 8 OF YOUR MANUAL FOR EXAMPLES.	FULL-TIME PERSONNEL	PART-TIME PERSONNEL	
TYPES OF PERSONNEL	(1) Number of Full-Time Personnel	(2) Number of Part-Time Personnel	(3) Total hours per week part-time personnel are available
Regular Classroom Teachers			
Special Instructional Personnel (speech, physical education, art, music, reading, etc.)			
Health Personnel (school nurse, school physician, etc.)			
Psychological Personnel (social workers, counselors, school psychologist)			
Media Specialists (certified personnel assigned to one or more school buildings who have not less than twelve hours of library science and/or audiovisual education and who have at least half of their workload devoted to service as a "media specialist". These persons may have a variety of titles such as school librarian, audiovisual specialist, or building coordinator.			
Paid Community personnel (tutors, teacher aides, parents, etc. who are paid for their services.)			
Volunteer Community Personnel (tutors, teacher aides, parents, etc. who are not paid for their services.)			

8. Is free or reduced-price food (at a price less than that charged most pupils in this school) provided for any pupils in grades 1 through 6 in this school? (Mark as many answers as apply.)

○ No
○ Yes, breakfast
○ Yes, lunch
○ Yes, milk
○ Yes, snack

9. Which of the following best describes the neighborhood or attendance area served by this school?

○ Rural
○ Residential and commercial industrial
○ Primarily residential

10. Which of the following best describes the location of this school?

○ Large city, over 500,000 population
○ Large city, 200,000 to 500,000 population
○ Suburb of a large city
○ Rural area near a large city
○ Middle-size city, 50,000 - 200,000 population
○ Suburb of a middle-size city
○ Rural area near a middle-size city
○ Small city or town, less than 50,000 population
○ Rural area, not near a large or middle-size city

11. Indicate on the line below the number of days your school will be in session during the 1968-69 school year, assuming that school will be in session during the remaining scheduled days. (Assume that the 1968-69 school year started in the Fall of 1968 and does not include a summer session.)

____________________ Days __________

12. Sometimes there are occasions when special problems such as natural disasters, epidemics, teacher strikes, etc. have long and prolonged effects on instruction.
Have there been any significant events or occurrences such as those listed above, which have resulted in the closing of your school for at least five consecutive week days during the 1968-69 school year?

○ Yes
○ No, skip to question 14.

13. If you answered "Yes" to question 12, for how many weeks was your school closed during the 1968-69 school year because of an event or occurrence similar to those listed in question 12?

○ One week
○ Two weeks
○ Three weeks
○ Four or more weeks

II. INSTRUCTIONAL ORGANIZATION

14. How are the elementary pupils in your school (Pupils in grades Kindergarten - 6) organized for instruction in your Regular Instructional Program? Please indicate in the table below the instructional organization for each grade in your school by marking either "Graded", "Non-graded", or "Both graded and "non-graded" for the appropriate grades or grade levels.

Please note the following definitions:

Regular Instructional Program--the school program generally available to all pupils in a grade, designed to increase power in the basic skills such as MATH, READING, and LANGUAGE.

Non-graded--an instructional group that includes pupils who would, in a graded system, be in two or more different grades.

Grade or Grade Level	INSTRUCTIONAL ORGANIZATION		
	Graded	Non-Graded	Both Graded and Non-graded
Kindergarten	○	○	○
Grade 1	○	○	○
Grade 2	○	○	○
Grade 3	○	○	○
Grade 4	○	○	○
Grade 5	○	○	○
Grade 6	○	○	○
Special classes for the mentally retarded or physically handicapped	○	○	○

15. How are pupils grouped within grades or levels for assignment to teachers in your regular instructional program in grades 2, 4, and 6 or their equivalents? (Mark one circle for graded and one circle for non-graded for each grade or equivalent.) Note the following definition of terms:

Homogeneously--Pupils grouped on the basis of a high degree of similarity with respect to any one or more of a number of traits, e.g., pupils may be grouped according to their ability in a given subject area, although these pupils will naturally vary in other traits.

Heterogeneously--A grouping in which no particular attention is paid to assigning pupils according to their similarity in a specific trait.

	Grade 2 or equivalent	Grade 4 or equivalent	Grade 6 or equivalent
Graded			
Homogeneously	○	○	○
Heterogeneously	○	○	○
Not applicable (non-graded school or grade not in school)	○	○	○
Non-graded			
Homogeneously	○	○	○
Heterogeneously	○	○	○
Not applicable (graded school or grade not in school)	○	○	○

16. On what basis are pupils placed in classes in levels which correspond to grades 2, 4 and 6 in the REGULAR INSTRUCTIONAL PROGRAM? Check all placement procedures that apply. (This question does not refer to promotion but placement in a specific class within a "grade.") (Mark all that apply.)

	Grade 2 or equivalent	Grade 4 or equivalent	Grade 6 or equivalent
Pupils' grades	○	○	○
Scores on standardized tests of achievement or intelligence	○	○	○
Special needs (e.g., psychological or emotional problems, handicapped, language impediments)	○	○	○
Teacher judgement of pupils' needs	○	○	○
Alphabetical	○	○	○
No pre-determined basis	○	○	○
Student request	○	○	○
Parent request	○	○	○
Other	○	○	○

17. Please indicate the number of weeks that each of the following types of programs will be offered in your school during the 1968-69 school year. Also indicate the average number of hours per week that such programs are offered, during the weeks in which they are offered. (Assume that the 1968-69 school year began in the Fall of 1968 and does not include a summer session.) See Page 9 of your Manual for Examples.

		GRADE 2			GRADE 4			GRADE 6		
		Math	Reading	Language	Math	Reading	Language	Math	Reading	Language
Programs for the Academically Disadvantaged	Weeks									
	Average Hours per Week									
Academic Enrichment Programs	Weeks									
	Average Hours per Week									

18. On what basis are elementary teachers (teachers of grades kindergarten through 6) assigned to the following types of instructional programs: (Mark all that apply for each type of program.) Note the following definitions:

Regular Programs: The program generally available to all pupils in a grade, designed to increase power in the basic skills such as MATH, READING, and LANGUAGE.

Programs For The Academically Disadvantaged: Efforts beyond the regular school program designed to assist pupils weak in a particular subject area by providing them with additional or alternative instruction.

Academic Enrichment Programs: Efforts beyond the regular school program designed to extend the pupils knowledge of MATH, READING, and LANGUAGE; primarily intended for bright pupils who progress through the grades at the same rate as others, but are given an enriched curriculum.

	Types of Programs		
Basis for Assignment	Regular Programs	Programs for the Academically Disadvantaged	Academic Enrichment Programs
Random assignment	○	○	○
Stated teacher preference	○	○	○
Specialized teacher training	○	○	○
Years of teacher experience	○	○	○
Qualification of teacher	○	○	○
Other - Specify	○	○	○

III. SCHOOL FACILITIES INFORMATION

19. A. Please indicate below the total number of classrooms available for instruction of elementary pupils (Pupils in grades K-6) in your school.

Total number of classrooms ____________

19. B. Please indicate the number of classrooms available to elementary pupils in your school in each of the following categories:

Large group instruction (Rooms designed for instruction of approximately 50 or more pupils)............ ________

Regular classrooms (Rooms designed for instruction of approximately 25 to 40 pupils)................ ________

Small group instruction (Rooms designed for instruction of approximately 10 to 15 pupils)............. ________

20. Please indicate the specialized facilities contained in your school by marking the appropriate circle to the right. Mark "Yes" only if the facility indicated is used by elementary pupils and teachers (pupils and teachers of grades K-6) and only if the primary use of the available facility is as indicated.

	Yes	No
a. Multi-Purpose Room (Large open room used for such multiple activities as gymnasium, cafeteria, auditorium, etc.)	○	○
b. Central Media Center (A room or section of a room primarily for use by students, which usually includes book collections and may include audio-visual equipment and materials.) Estimate the number of books contained in the central media center and write the number in the space below ________	○	○
c. Classroom Libraries (Collections of books which include volumes other than regular texts, housed within classrooms. This may include collections loaned from a centralized library for use by the class for 6 weeks or more.)	○	○
d. Learning Laboratories (A room containing 15 or more student booths, carrels, or laboratory work stations where a single student uses instructional materials presented by mechanical (or electronic) projection and or sound reproductive devices.)	○	○
e. Audio-Visual Room (A room containing projection equipment and room darkening control where classes may be taken for viewing of audio-visual materials)	○	○
f. Instructional Materials Production Center (A room containing equipment and materials for production of items such as duplicated materials, overhead transparencies, and other audio-visual materials housed within one room)	○	○
g. Television Production Studios (A room containing equipment and resources for production of live television or video-tape recorded programs for distribution or playback through other television resources)	○	○
h. Teacher Reference Center (A room or section of a room containing current publications and reference materials especially for teachers' use in the development of instructional materials.)	○	○

21. If you have indicated in item 20d that Learning Laboratories are contained in your school, please indicate the number of carrels, booths, or stations equipped as indicated below: (Include only facilities available for use by elementary pupils (grades K-6) in your school.)

Audio equipment only (e.g., tape recording) ________

Audio and visual equipment (e.g., slides and tapes) ________

Visual equipment only (e.g., silent motion pictures, overhead transparencies, etc.) ________

Television receivers ________

Computer terminals ________

Non-computer type Teaching Machines (devices which control the presentation of material to students and adjust the presentation based upon the student's response ________

22. If you have indicate in item 20f that your school has Instructional Materials Production Center, please indicate below the type of materials which can be produced: Blacken the circle indicating "Yes" or "No" for each type of material.

	Yes	No
Duplicated materials (spirit masters or mimeograph)	○	○
Overhead transparencies	○	○
Copies of single pages from printed materials	○	○
Duplicates of photographic slides	○	○
Photographic prints and or slides	○	○
Lettering for posters, signs, photography, TV, etc.	○	○
Motion pictures	○	○
Audio-tape or disc recordings	○	○
Television tape recordings	○	○

23. Do the majority of the teachers in your school use instructional resources from reference centers outside the school? (e.g., Title III Supplementary Centers, Bureaus of Research, Film Libraries) (Exclude public libraries)

○ Yes
○ No
○ Reference centers outside the school are not available.

24. Please indicate the number of elementary classrooms (classrooms for grades K-6) in your school equipped with the following fixed facilities: (Do not include multi-purpose rooms)

Projection screens .... ______

Light control for projection (e.g., room-darkening drapes or shades)........................ ______

In-room terminals for television antenna ..... ______

In-room connections for closed-circuit television.......................... ______

Independent Study Stations: a booth, carrel, or laboratory work area where a single student uses instructional materials presented by mechanical (or electronic) projection and or sound reproduction devices e.g., language laboratory, dial access system, computer terminal, film projectors, tape recorders, etc.) .... ______

Electrical outlets (for use of audio-visual equipment).......................... ______

25. Does your school provide material or equipment used to acquaint pupils with the opportunities offered by Vocational Education Programs?

(Vocational Education Programs at the elementary level are these designed to familiarize elementary school students with the broad range of occupations for which special skills are required; the requisites for careers in such occupations; and the various programs available at the secondary level to prepare individuals for gainful employment as semi-skilled or skilled workers, excluding programs generally considered professional or requiring a baccalaureate or higher degree.)

○ Yes, material
○ Yes, equipment
○ No

26. Please indicate below the copyright date of the most frequently used texts in MATH and READING in your REGULAR SCHOOL PROGRAM in grades 2, 4 and 6. If the texts are revised editions, please give the date of first copyright of the revision. If it is the original version, give the date of first copyright. Do not give the dates of various printings.

	Grade 2	Grade 4	Grade 6
Math	______	______	______
Reading	______	______	______

IV. STUDENT BODY DESCRIPTION

27. What percent of the pupils in this school are members of the following national minority groups (Racial or national origin groups which are a minority of the national population)? If the information is available from school records, use this information in answering. If the information is not available, please estimate. (Blacken one circle in each line.)

	None	1-10%	11-25%	26-50%	51-75%	76-90%	91-100%
American Indian	○	○	○	○	○	○	○
Negro	○	○	○	○	○	○	○
Oriental	○	○	○	○	○	○	○
Spanish-surnamed American (Persons of Cuban, Mexican, Puerto Rican, or Spanish descent)	○	○	○	○	○	○	○

28. Please estimate the per cent of the pupils in this school who are members of families whose primary means of support is a public welfare program.

○ None ○ 11-25% ○ 51-75% ○ 91-100%
○ 1-10% ○ 26-50% ○ 76-90%
○ No basis for estimation

29. Please estimate the per cent of the pupils in this school who are members of families whose Head of Household did not complete the 8th grade. (The Head of the Household is the person who is the primary supporter of this pupil's family.)

○ None ○ 11-25% ○ 51-75% ○ 91-100%
○ 1-10% ○ 26-50% ○ 76-90%
○ No basis for estimation

30. Are standardized reading achievement test results available for tests administered to 6th grade pupils in your school since October 1, 1968?

○ Yes
○ No, skip to question 32
○ School does not include 6th grade (Skip to question 32)

31. Based on the results of standardized reading achievement tests administered to pupils in Grade 6 since October 1, 1968, estimate to the nearest 10% the percentage of 6th grade pupils in your school who:

Are at least one grade level but less than two grade levels below national norms .... ______%

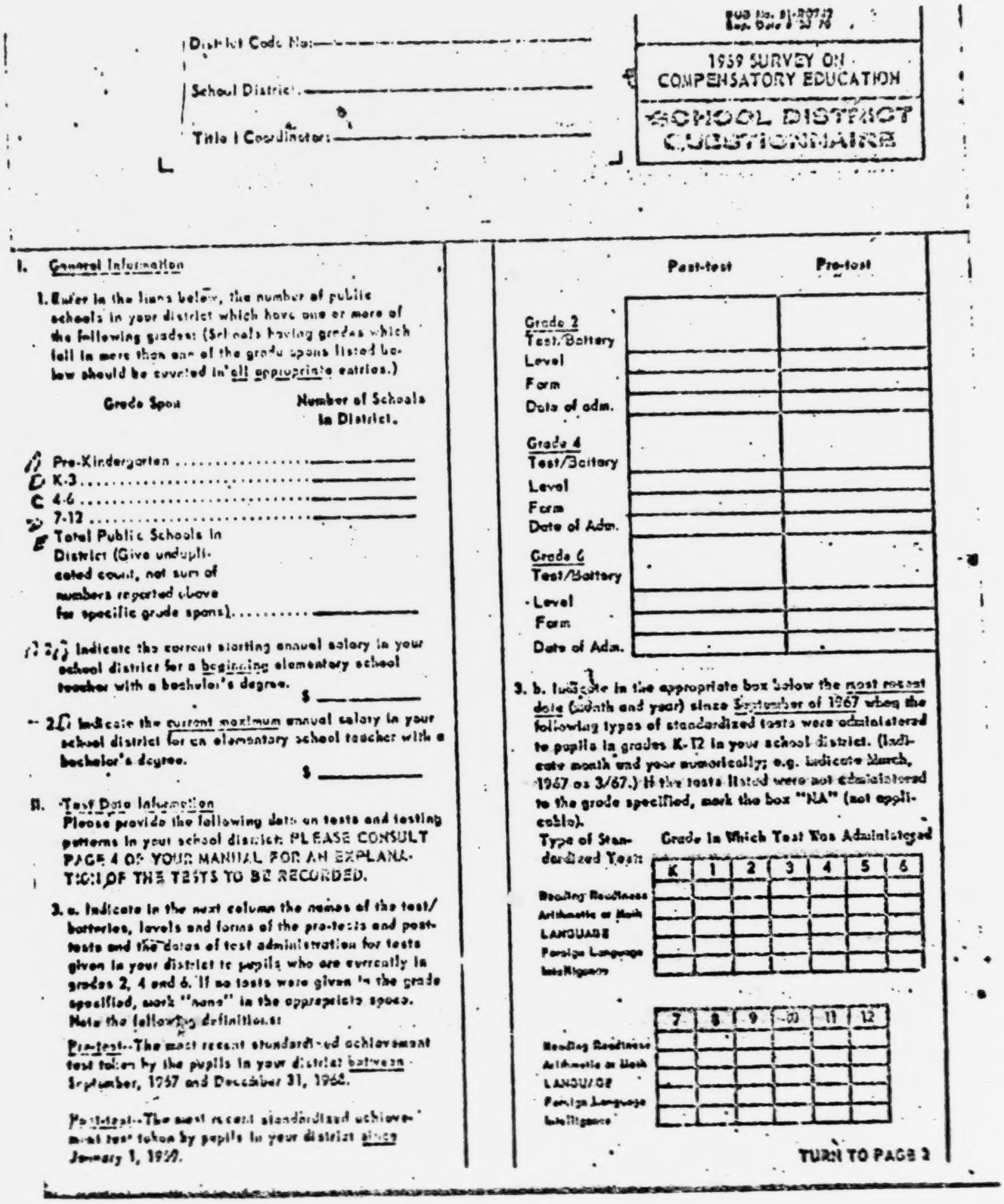
Are at least two grade levels or more below national norms .... ______%

32. Please record below the street address (but not the name) of this school:

Street: ______________________________

City: ______________________________

State: ______________ Zip Code: ______________



BOB No. 51-R07[illegible]
Exp. Date [illegible]

1959 SURVEY ON COMPENSATORY EDUCATION

SCHOOL DISTRICT QUESTIONNAIRE

District Code No: ______________________

School District: ______________________

Title I Coordinator: ______________________

I. General Information

1. Enter in the lines below, the number of public schools in your district which have one or more of the following grades: (Schools having grades which fall in more than one of the grade spans listed below should be counted in all appropriate entries.)

Grade Span	Number of Schools In District.
A Pre-Kindergarten	________
B K-3	________
C 4-6	________
D 7-12	________
E Total Public Schools in District (Give unduplicated count, not sum of numbers reported above for specific grade spans)	________

2. a. Indicate the current starting annual salary in your school district for a beginning elementary school teacher with a bachelor's degree. $ ________

2. b. Indicate the current maximum annual salary in your school district for an elementary school teacher with a bachelor's degree. $ ________

II. Test Data Information
Please provide the following data on tests and testing patterns in your school district. PLEASE CONSULT PAGE 4 OF YOUR MANUAL FOR AN EXPLANATION OF THE TESTS TO BE RECORDED.

3. a. Indicate in the next column the names of the test/batteries, levels and forms of the pre-tests and post-tests and the dates of test administration for tests given in your district to pupils who are currently in grades 2, 4 and 6. If no tests were given in the grade specified, mark "none" in the appropriate space. Note the following definitions:

Pre-test--The most recent standardized achievement test taken by the pupils in your district between September, 1967 and December 31, 1968.

Post-test--The most recent standardized achievement test taken by pupils in your district since January 1, 1969.

	Post-test	Pre-test
Grade 2 Test/Battery		
Level		
Form		
Date of adm.		
Grade 4 Test/Battery		
Level		
Form		
Date of Adm.		
Grade 6 Test/Battery		
Level		
Form		
Date of Adm.		

3. b. Indicate in the appropriate box below the most recent date (month and year) since September of 1967 when the following types of standardized tests were administered to pupils in grades K-12 in your school district. (Indicate month and year numerically; e.g. indicate March, 1967 as 3/67.) If the tests listed were not administered to the grade specified, mark the box "NA" (not applicable).

Type of Standardized Test:	K	1	2	3	4	5	6
Reading Readiness							
Arithmetic or Math							
LANGUAGE							
Foreign Language							
Intelligence							

Grade in Which Test Was Administered

	7	8	9	10	11	12
Reading Readiness						
Arithmetic or Math						
LANGUAGE						
Foreign Language						
Intelligence						

TURN TO PAGE 2

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3. c. On the Pupil Questionnaire of this survey, teachers are asked to provide pre-test and post-test scores for pupils on Standardised Achievement Tests. Please indicate, by marking the appropriate circles below, the norm groups that were used to compute the scores being reported by the teachers in your school district, for pupils in grades 2, 4, and 6.

	Pre-test scores			Post-test scores		
Norm Group	Gr.2	Gr.4	Gr.6	Gr.2	Gr.4	Gr.6
National	○	○	○	○	○	○
State	○	○	○	○	○	○
Local (district)	○	○	○	○	○	○
Other (specify)	○	○	○	○	○	○
Don't know	○	○	○	○	○	○
Test data not provided	○	○	○	○	○	○

3. d. If you indicated in Item 3c that the test data being reported by your school district were based on local norms, please enclose a copy of the following conversion tables (listed in preferential order). The enclosure should consist of conversion tables which correspond to the type of test score reported on the Pupil Questionnaire portion of this survey, for Reading subtests, Arithmetic subtests, Language subtests and Composite scores. In addition, please indicate below, the conversion tables which you are enclosing for each of the grades specified. (Mark the appropriate circle in the table below.)

CONVERSION TABLES BY SUBTEST AND GRADE

Conversion Tables	Reading			Arithmetic		
	Gr.2	Gr.4	Gr.6	Gr.2	Gr.4	Gr.6
Raw Score to Grade Equivalent Score	○	○	○	○	○	○
Raw Score to Percentile	○	○	○	○	○	○
Raw Score to Stanine	○	○	○	○	○	○

Conversion Tables	Language			Composite		
	Gr.2	Gr.4	Gr.6	Gr.2	Gr.4	Gr.6
Raw Score to Grade Equivalent Score	○	○	○	○	○	○
Raw Score to Percentile	○	○	○	○	○	○
Raw Score to Stanine	○	○	○	○	○	○

III. Title I, Elementary and Secondary Education Act (ESEA) Information

4. Indicate in the space provided below the amount of Title I, ESEA, funds which were approved for use in your district during the 1969 fiscal year. (Between July 1, 1968 and June 30, 1969).

$ ________

5. Enter below unduplicated counts of the numbers of public and non-public school pupils in your district who receive services funded through Title I, ESEA, for the entire year including the summer of 1968 (Anytime), and separately for the summer of 1968, for each of the indicated grade spans:

	Anytime (Summer of 1968 and 1968-69 school year)	Summer of 1968
A Pre-Kindergarten	________	________
B K-3	________	________
C 4-6	________	________
D 7-12	________	________
E TOTAL	________	________

6. Enter in the lines below the number of public schools in your district which have one or more of the following grades and which provide instructional programs and services funded by Title I, ESEA, during the 1968-69 school year: (Schools having grades which fall in more than than one of the grade spans listed below should be counted in all appropriate entries.)

Grade Span	Number of Public Schools in District Providing Services funded by Title I, ESEA, during 1968-69 school year
A Pre-Kindergarten	________
B K - 3	________
C 4 - 6	________
D 7 - 12	________
E TOTAL PUBLIC TITLE I SCHOOLS IN DISTRICT (Give unduplicated count, not sum of numbers reported above for specific grade spans)	________

7. The Title I regulations require that projects be designed to meet the needs of educationally disadvantaged children living in school attendance areas with high concentrations of children from low-income families. High concentration attendance areas are those in which the concentration of children from low income families is as high or higher than the average concentration for the district as a whole.

Indicate below the basis which is used in your district for allocating project funds from Title I, ESEA, to school attendance areas: (Mark all that apply)

1 ○ Family Income. If family Income is used, please indicate the annual family income level used in your district for allocating Title I funds: $ ________
2 ○ Proportion of children whose families receive Aid to Families with Dependent Children (AFDC)
3 ○ Proportion of children receiving free lunches
4 ○ Proportion of unemployed
5 ○ Housing quality index
6 ○ Other basis, please specify________

IV. Parent Involvement Information

8. Which of the following methods of securing parent involvement in Title I, ESEA, programs have been utilized by your district since June, 1968? (Blacken all circles that apply)
1 ○ Title I, ESEA, Citizens' Advisory Committees (A group of parents from your school district who review and advise on Title I, ESEA, programs. Do not include the School Board.)
2 ○ Home visits by teachers of academically disadvantaged pupils.
3 ○ Use of parents as aides in Title I, ESEA, programs
4 ○ Use of Title I, ESEA, funds to support parent education programs
5 ○ Other, specify ____________________

If you do not have Title I, ESEA, Citizens' Advisory Committees in your district, skip to Section V, Personnel Training Information.

9. Indicate below the total number of Title I, ESEA, Citizens' Advisory Committees currently active in your district: ____________

10. Did you receive ASSISTANCE (involvement with the actual tasks of establishing committees) or ADVICE (verbal or instructional help in setting up committees) from your State Department of Education in creating Title I, ESEA, Citizens' Advisory Committees in your district? (Blacken all circles that apply)
1 ○ Yes, ASSISTANCE
2 ○ Yes, ADVICE
3 ○ No

11. Since June, 1968, with which of the following have Title I, ESEA, Citizens' Advisory Committees in your district been primarily concerned?
1 ○ Issues concerning the entire district
2 ○ Issues concerning a subdivision of the district
3 ○ Issues concerning individual schools in the district
4 ○ Issues concerning specific Title I, ESEA, projects in the district
5 ○ Other, specify ____________________
____

12. Since June, 1968, which of the following duties have Title I, ESEA, Citizens' Advisory Committees in your district performed? (Blacken all circles that apply)
1 ○ Supplied information on parents' views of unmet educational needs
2 ○ Supplied information on students' views of unmet educational needs
3 ○ Made recommendations on the expenditure of Title I, ESEA, funds
4 ○ Participated in the development of Title I, ESEA, applications
5 ○ Reviewed Title I, ESEA, applications
6 ○ Made recommendations on the improvement of Title I, ESEA, programs
7 ○ Participated in Title I, ESEA, program evaluations
8 ○ Recommended teacher-personnel policy changes
9 ○ Other, specify ____________________
____

13. Please indicate below the primary methods of selection of the following types of persons who have served on Title I, ESEA, Citizens' Advisory Committees in your district since June, 1968: (Blacken all appropriate circles)

Methods of Selection:
8. Appointed by School District
7. Appointed by Community Action Organization
6. Appointed by School Principal
5. Appointed by PTA
4. Town Meeting Election
3. Self-Selection
2. Other
1. No Participation

Types of Persons:								
A Public School Administrators	①	②	③	④	⑤	⑥	⑦	⑧
B Public School Teachers	①	②	③	④	⑤	⑥	⑦	⑧
C Parents of Title I Children	①	②	③	④	⑤	⑥	⑦	⑧
D Other lay community members	①	②	③	④	⑤	⑥	⑦	⑧
E Officials of other community action organizations	①	②	③	④	⑤	⑥	⑦	⑧
F Students from local secondary schs.	①	②	③	④	⑤	⑥	⑦	⑧

V. Personnel Training Information

14. Please estimate the amount of Title I, ESEA, funds to be expended by your district for participation in, or support of, in-service training programs during the 1969 fiscal year (July 1, 1968 to June 30, 1969)
$ ____________

15. Please indicate the number of personnel of the following types in your school district who have participated in in-service training programs funded by Title I, ESEA, or programs for which participation is supported by Title I, ESEA, during each of the following times. Mark "None" to indicate no participation. (Mark all that apply)
Title I, ESEA, In-Service training programs are defined as: Training programs funded by Title I, ESEA, or programs for which participation is supported by Title I, ESEA, which serve personnel employed in the education profession, and follow a prescribed course of study or instruction, - including regular college courses (whether taken for credits or not), institutes and programs sponsored by the school district, State Education Agency, professional teacher organizations, or the Federal government.

Program Participants	a Programs conducted during: summer of 1968	b 1968-69 school year
A School principals	____________	____________
B Regular classroom teachers	____________	____________
C Specialist teachers (e.g. remedial reading teachers)	____________	____________
D Other professional personnel (e.g. guidance personnel)	____________	____________
E Teacher aides	____________	____________

16. Have classroom teachers in your district participated in In-Service training programs funded by Title I, ESEA, or programs for which participation was supported by Title I, ESEA, since June, 1963 which incorporated joint training with:

a. Teacher aides or other supportive personnel	○ Yes	○ No
b. Other professional personnel (e.g. health or guidance personnel)	○ Yes	○ No
c. Parents of their pupils in their school	○ Yes	○ No

17. Indicate by blackening the appropriate circles the main objectives of the In-Service training programs 1) funded by Title I, ESEA, or 2) for which participation is supported by Title I, ESEA, (e.g., payment of tuition or registration fees for individual staff members) available to each of the following types of personnel in your district since June, 1963: (Blacken all appropriate circles)

PROGRAM PARTICIPANTS

5. Teacher Aides
4. Other Professional Personnel (e.g. health or guidance personnel)
3. Specialist Teachers
2. Regular Classroom Teachers
1. School Principals

Program Objectives:	1	2	3	4	5
A To provide training or introduce new instructional techniques in academic subject areas	①	②	③	④	⑤
B To provide laboratory sensitivity training in the development of positive classroom climates	①	②	③	④	⑤
C To provide training or introduce new techniques in the use of equipment or materials	①	②	③	④	⑤
D To provide training or introduce new techniques in ancillary service areas	①	②	③	④	⑤
E To provide orientation to school plants or facilities	①	②	③	④	⑤
F To provide training or introduce new instructional techniques particularly relevant to teaching disadvantaged children	①	②	③	④	⑤
G To provide training pertinent to instructing pupils from national minority groups (racial or ethnic)	①	②	③	④	⑤
H Other, specify below	①	②	③	④	⑤

____

____

____

18. If professional instructional personnel (classroom teachers, specialist teachers) or supportive instructional personnel (teacher aides) in your school district participated in Title I, ESEA, In-Service training programs for which participation was supported by Title I, ESEA, (e.g. payments of tuition or registration fees for individual staff members) since June, 1963 which had as their main objective training in new instructional techniques or training in the use of instructional equipment or materials in academic subject areas, please indicate below the subject matter areas included in the programs. (Blacken all of the appropriate circles). Note the following definitions:

Title I, ESEA, In-Service Training Programs--Training programs funded by Title I, ESEA, or programs for which participation is supported by Title I, ESEA, which serve personnel employed in the education profession, and follow a prescribed course of study or instruction, including regular college courses (whether taken for credits or not), and institutes and programs sponsored by the school district, State Education Agency, professional teacher organizations or the Federal government.

Language--The study of correct English usage. (May include grammar, spelling, English expression, speaking or writing).

	Program Participants	
Subject Area	A Professional Instructional Personnel	B Supportive Instructional Personnel
a Math Programs	○	○
b Reading Programs	○	○
c Language Programs	○	○
d Other subject matter area	○	○

19. If professional instructional personnel (classroom teachers, specialist teachers) or supportive instructional personnel (teacher aides) in your school district participated in Title I, ESEA, In-Service training programs or programs for which participation was supported by Title I, ESEA, (e.g., payment of tuition or registration fees for individual staff members) since June, 1963, which focused on instructional techniques intended for use at particular grade levels, please indicate below the grade levels covered. (Mark all that apply.)

	Program Participants	
Grade Levels Covered	Professional Instructional Personnel	Supportive Instructional Personnel
a Pre-Kindergarten	○	○
b Kindergarten	○	○
c Grades 1-3	○	○
d Grades 4-6	○	○
e Grades 7-9	○	○
f Grades 10-12	○	○
g Adult Programs	○	○

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Appendix B

Methodology of the 1969 Survey of Compensatory Education

Introduction

In this appendix, the methods used in surveying the education of disadvantaged children in Title I elementary schools are described. Survey research methods, data editing and analysis, generalizability of data and cautions on data interpretation are presented.

Attempts to evaluate complex social programs involve a host of assumptions, simplifications, and abstractions. Evaluation of the education of disadvantaged children is no exception. Home and community, education in basic skills in our schools, and learning from peers both in and out of school have profound and interrelated effects upon the development of disadvantaged children. The task of the researcher is to untangle the web of complexity, to explain, to simplify, and to clarify. The task of the evaluator is to build upon a research base and provide guidance for decision making and educational planning and for the derivation of justifiable value judgments.

Research Design

Many different approaches to the evaluation of the Title I program and Title I projects have been employed by school districts, state departments of education, and the U.S. Office of Education. Many local school districts have used experimental or quasi-experimental designs to examine the results of individual Title I projects. The U.S. Office of Education has attempted to evaluate the Title I program nationally and has used sample survey methods to gather data about districts, schools, teachers, and students. The use of pupil questionnaires has made it possible to relate characteristics of pupil background and need to pupil participation in compensatory education programs.

Since not all pupils in Title I schools receive compensatory education services, it was decided that data on whole classes or whole schools would not provide sufficiently precise information on the operation of compensatory education programs. The present research design assumed that Title I funds were directed to schools in eligible attendance areas, which then provided compensatory education services to limited groups of pupils. Pupils were sampled from the classes disregarding whether or not they participated in compensatory programs. This research design allows the investigation of a number of correlational issues relevant to the efficiency and effectiveness of the Title I program, in addition to providing considerable descriptive information on the population of pupils in Title I elementary schools. Where data were available, other analyses were performed including achievement gain-score analyses and factor analyses. The results of these analyses reflected upon the efficiency of Title I program administrators in reaching those pupils most in need of those services and the effects of those services on students who did receive them.

The most important weakness of the research design is that no districts or schools not participating in Title I were included in the Survey. Hence, either important allocation questions (e.g., "Were participating schools more needy than nonparticipating schools?") had to go unanswered or else one was forced to run the considerable risks of crossing data streams to obtain information about schools, teachers, and pupils in general in the country.

For purposes of assessing the impact of compensatory education programs on the behavior of disadvantaged pupils, the 1969 Survey of Compensatory Education must be regarded as "nonexperimental" or, at least, an _ex post facto_ experiment. No control was exercised over the assignment of pupils to participate or not participate in compensatory programs. In the absence of such experimental control, the results of any _ex post facto_ analysis of program impact must remain tentative and open to question. Thus the analyses reported in Chapter VI are less than fully trustworthy. It is doubtful that the question of program impact on pupil performance can be given a definitive answer by any methodology short of a controlled, variable-manipulated experiment, or at least a "quasi-experiment" of established validity. Preliminary nonexperimental analyses in this report and the report of the 1968 Survey have raised questions of the effect of participation in compensatory academic programs on pupil achievement. In fact, the hypothesis of a general measurable impact has been so convincingly called into question that it can not be argued that to withhold compensatory programs from a nonparticipating "control group" would be depriving them of obvious benefits.

The Survey Population

The population of schools sampled in the 1969 Survey of Compensatory Education consists of those elementary schools offering services supported under Title I of the Elementary and Secondary Education Act during the 1968-69 school year. The designation of schools as "Title I" results from a complex set of legislative and administrative criteria.

The allocation of Title I funds by formula establishes maximum authorizations for county units. These authorizations are based upon the number of poor children aged 5 through 17 in the county, times one-half the maximum of the average per pupil expenditure for education of the state of which the county is a part, or the average per pupil expenditure of the Nation. The number of poor children in the county is determined primarily from 1960 census data on poverty, and consists of the number of children aged 5 through 17 who (a) came from families with income under $2,000 per year, as of the 1960 census, (b) the number of children in foster homes or who reside in institutions for the neglected and delinquent, and (c) the number of children from families with income over $2,000 per year who receive Aid to Families with Dependent Children. It should be noted that shifts in population since 1960 might produce inequities in these Title I authorizations. Allocation of Title I funds to school districts within county units is a responsibility of state education agencies. Allocations are based on data which the state agency considers best reflects the distribution of children in the county, aged 5 through 17, who are poor by the definitions used in the county allocations. Criteria on minimum numbers of poor children and requirements for compliance with Title VI of the Civil Rights Act of 1964 exclude some 2,000 of the 20,000 school districts in the Nation from participation in the Title I program.

The selection of school districts for the 1969 Survey on Compensatory Education was based on a sampling frame consisting of all school districts in the nation with enrollments in excess of 300 which received allocations from Title I for the 1968-69 school year. It should be noted that some number of school districts with high concentrations of poverty have probably been excluded from the Survey because of noncompliance with Title VI of the Civil Rights Act of 1964. Inclusion of these school districts would probably change the racial distribution of pupils sampled by increasing slightly the total proportion of Negro pupils.

School districts are responsible for selection of schools for participation in the Title I program. To select schools for Title I program participation, school districts rank all school attendance areas in the district by the percentage of poor children residing therein. The definition of poverty varies from school district to school district, and may include one or more of the factors used in determining district allocations, with varying definitions of low income. Schools eligible to participate in the Title I program are those with attendance areas containing a higher proportion of poor children than the percentage in the school district as a whole.

Only pupils attending participating schools are eligible to receive Title I services. The selection of schools and pupils for Title I eligibility by these criteria, while assuring that many poor children will be eligible for Title I services, does not assure that all needy pupils will be eligible nor that all affluent pupils will be ineligible. Poor children residing in socioeconomically heterogeneous neighborhoods are often excluded from eligibility. Similarly excluded are children residing in small pockets of poverty within school attendance areas containing larger groups of high-income families.

Not all schools eligible to participate in the Title I program become partidipating schools. After determining those schools eligible for participation in the Title I program, the school districts must assess the educational deficiencies of children in eligible attendance areas. Districts then determine the priority needs of such children by grade level or age group. Title I programs are established in a subset of the eligible schools to meet the priority needs of eligible children within the school district. Within schools participating in the Title I program, all enrolled pupils are eligible for receipt of Title I services. However, not all pupils in Title I schools were involved in compensatory education programs. Thus the 1969 Survey of Compensatory Education cannot be termed a survey of poor children nor a survey of educationally disadvantaged children. There exist many poor and educationally disadvantaged elementary school pupils outside the population of schools to which 1969 Survey data generalize. Many attend Title I eligible schools which do not provide services funded under the program. Many poor children attend schools which are not eligible to provide services under Title I, and many affluent children attend schools which are eligible to provide services under Title I.

Two populations of pupils have been designated in analyses of the data resulting from the 1969 Survey. One group, consisting of "participants", consists of those pupils reported by teachers to be participating in an academic compensatory education program during the 1968-69 school year. The population labeled "nonparticipants" consists of those pupils who the same responding teachers reported were not participating in academic compensatory education programs during the 1968-69 school year. It is important to note that the source of funding of the reported academic compensatory education programs was not determined in the survey. It is known, however, that all sampled schools provided services supported under Title I.

All of the pupils sampled in the 1969 Survey were either in grades two, four, or six during the 1968-69 school year. The survey data can be expected to generalize to pupils in these grades within the population of public elementary schools participating in the Title I program during the 1968-69 school year, in districts with enrollments in excess of 300. It would be fair to expect to generalize to the entire grade one through six span in this population of schools. The survey data do not, however, represent either preschool programs or children, or secondary school programs or children.

Sample Design

The complex and efficient sampling design used in the

1969 Survey of Compensatory Education was developed by the Office of Education's National Center for Educational Statistics (NCES). The basic design was multistage, requiring the selection of schoold districts as primary smapling units, schoold within districts as secondary sampling units, class sections within schools as tertiary sampling units, and pupils within classes as the smallest units. To further increase sampling efficiency, school districts were to be selected within four strata established by enrollment size of district.

Within each enrollment size stratum, school districts participating in the Title I ESEA program during the 1968-69 school year were to be subject to selection through a systematic random sampling procedure. All elementary schools in the district which provided services under Title I during the 1968-69 school year were to be subject to selection through systematic random sampling. All principals in selected schools were to be sent a questionnaire for completion.

With one modification, all homeroom teachers with second-, fourth-, and sixth-grade classes in sampled schools were to be sent questionnaires for completion, for themselves and for a sample of pupils in their classes. The modification of this procedure involved the elimination of teachers in schools in which the total number of pupils enrolled in the grade of the teacher's class was less than 15.

Teachers were to complete questionnaires for a sample of pupils from their class, selected by a systematic random procedure with adjustment for class size. This procedure was to result in a sampling of all pupils in a selected school grade, regardless of pupil participation in Title I or compensatory education programs.

The sample design was to produce a national total and percentage estimates for critical variables within 5 percent of true national totals and percentages at a confidence level of 95 percent. It was not intended that the sample produce estimates of totals and percentages which would be representative for regions of the nation, states, school districts, or schools. The sampling of units at each stage of the design employed was such that serious biases or poor precision might result in estimates within regions of the nation, states, school districts, or schools.

The populations to which estimated totals and percentages were to generalize were composed of Title I participating school districts with enrollments of at least 300, and in those districts, the elementary schools, elementary school teachers, and elementary school pupils (grades one through six with a total enrollment of 15 or more students per grade) in schools which participated in the Title I ESEA program during the 1968-69 school year.

Sampling Procedures

In accordance with the sample design provided by NCES, survey questionnaires were sent to principals and teachers in 438 school districts participating in the Title I ESEA program during the 1968-69 school year. NCES staff selected, within sampled school districts, 2,920 elementary schools offering services funded through Title I during the 1968-69 school year.

Sampled school districts were chosen on a systematic random sampling basis within four district enrollment strata. Sizes of district samples within the four enrollment strata were established by the principle of optimal allocation. Enrollment designations, population sizes, and sample sizes for the four strata were as follows:

Stratum	Enrollment within school district	Number of districts receiving Title I funds	Sample size
I	40,000 or more	92	91
II	9,000 - 39,999	658	124
III	3,000 - 8,999	1,917	121
IV	300 - 2,999	6,569	102
	TOTAL	9,236	438

As is evident from the tabulation above, school districts with enrollments smaller than 300 were not sampled. The size of the school district sample and the method of sampling provided a nationally representative sample of those school districts which received funds under Title I ESEA, and which had enrollments of at least 300.

Despite the constraints on school districts in the 1969 Survey population, the inflation of the Title I sample compared favorably, in numbers of public school systems and number of public school pupils by enrollment of school system, to statistics for all public school systems as reported by NCES. The sample of school districts used in the 1969 Survey of Compensatory Education is essentially identical to that used in the 1969 Title I Statistical Report sample. These data provide assurance that the 1969 Survey sample of districts is essentially unbiased in its representation of school districts and public schoo pupils by size of school system.

NCES data indicated that the restriction of the 1968 Survey sample to districts with enrollments in excess of 300 excluded at most 734,662 pupils from the generalization of the collected data. This represented the total enrollment of the 8,393 school districts with enrollment under 300. While some 41 percent of the Nation's school districts were of this size, their total enrollment represented only 1.7 percent of the school children. The exclusion of districts and pupils from the 1969 Survey is even less serious due to the continuing trend of consolidation of school districts across the nation.

Sampling of schools within selected school districts was, with slight modification, accomplished by a systematic random procedure with a sampling fraction of 1:1.4.

All principals and all teachers in grades two, four, and six in sampled schools were sent survey questionnaires, provided at least 15 pupils were enrolled in the school grade taught by the teacher. Teachers were asked to complete questionnaires for themselves and for a sampling of individual pupils in their classes. Depending on class size, each teacher in the sample was asked to complete from three to six questionnaires for pupils in his class. Teachers were instructed to develop an alphabetical list of the pupils enrolled in their classes, number the pupils sequentially, and select pupils for inclusion in the survey in accordance with the tabulation below:

Class enrollment	Selected pupils
12-16	2nd, 7th, 12th
17-20	1st, 6th, 11th, 16th
21-23	4th, 9th, 14th, 19th
24-27	3rd, 8th, 13th, 18th, 23rd
28-31	2nd, 7th, 12th, 17th, 22nd, 27th
32	3rd, 8th, 13th, 18th, 23rd, 28th
33-36	1st, 7th, 13th, 19th, 25th, 31st
37-41	6th, 12th, 18th, 24th, 30th, 36th
42-46	5th, 12th, 19th, 26th, 33rd, 40th
47-51	4th, 12th, 20th, 28th, 36th, 44th

Weighting of Data

Analysis of data from the 1969 Survey of Compensatory Education requires the inflation of observed proportions and totals to estimate national proportions and totals for all elementary schools receiving services under Title I of the Elementary and Secondary Education Act during the 1968-69 school year. Because a complex sample design was employed in the 1969 Survey, neither pupils, teachers, schools, nor school districts entered the selected sample with equal probabilities. The complexities of the sample design must be taken into account when calculating the a priori probabilities of selection of school districts, schools, teachers, and pupils for the survey, and when calculating the weights or inflation factors which must be applied to these units when estimating national proportions and totals.

The weighting applied to sample data is consistent with the design described in the "Sample Design" section. Since school districts were selected within four separate enrollment size strata, separate weights were calculated for inflation of district totals to population totals for each stratum. Analyses of data for principals, teachers, and pupils within each grade required the use of additional weights to inflate responses to school district totals. Products of weights were then applied to inflate pupil, teacher, and principal responses, first to district totals and then to population totals within each enrollment stratum. The procedures applied are discussed in further detail below.

Stratum weights: Within each of the four district enrollment strata used in the survey, all sampled school districts were subject to selection with equal probability. The probability of a district entering the sample in the i th stratum is therefore equal to

$$\frac{\text{Number of districts sampled in the i th stratum}}{\text{Total number of districts in the population of the i th stratum}}$$

Since not all districts responded within a stratum, the probability of district selection was adjusted in calculating weights by assuming that nonresponse was an equally likely chance phenomenon. The stratum weights were thus calculated as the inverse of the ratio

$$\frac{\text{Number of districts responding in the i th stratum}}{\text{Total number of districts in the population of the ith stratum}}$$

where i = stratum I, II, III, or IV.

The stratum weights used in the 1969 Survey are tabulated below.

Stratum no.	Enrollment size	Inflation factor
I	40,000 or more	1.01
II	9,000 to 39,999	5.31
III	3,000 to 8,999	15.84
IV	300 to 2,999	64.40

Principal weights: As described in the section on "Sample Design," schools within selected districts were subjected to systematic random sampling, if they provided services supported under Title I ESEA during the 1968-69 school year.

The principal weights applied to data from principals are equal to the inverse of the ratio

Total number of principals responding within district j in stratum i/Total number of principals in the population in district j in stratum i

where

i = stratum I, II, III, or IV

$J = 1,2,....n_i$

n_i denotes the number of sampled school districts in stratum i.

Again, nonresponse was assumed to be an equally likely event withi
a school district.

The inflation factor applied to principal data from a sampl
when inflating to national totals, is the product of the principal
weight applied to those data.

Teacher weights: The weights used to inflate teacher data t
district totals, for each grade and school selection condition, a
equal to the inverse of the ratio

> Total number of responding teachers in grade k, district j a
> stratum i/Total number of teachers in the population in grad
> district j, and stratum i

where

i = stratum I, II, III, or IV

$j = 1,2....,n_i$

n_i denotes the number of sampled school districts in stratu
Equal likelihood of nonresponse is again assumed for each teacher
sample within a given grade, and school district.

The inflation factors applied to weight teacher data to nation
are equal to the product of the teacher weights and stratum weigh
applied to those data.

Pupil weights: Data for pupils were weighted separately for p
in each of grades two, four and six. Again, the weights applied w
equal to the inverse of the ratio of the number of pupils questionn
received to the number of pupils in the population within each st
school district, and grade. One simplification was made consistent
in calculating weights for pupil data. The probability of selectio
for a given pupil depended in part upon the size of his class. A
pupil in a class of enrollment under 20 had a selection probabilit
about one in five, given that his teacher was selected. A pupil in
class with an enrollment of 42 had a selection probability of abou
in seven, given that his teacher was selected. These slight diff
in selection probability were ignored in calculating pupil weights.
resulting bias was deemed to be negligible.

The weights applied to pupil data, for inflation to school di
totals, for each grade and school selection condition, are equal to
inverse of the ratio

Total number of pupils for whom data were obtained in grade k, district j, and stratum i/Total number of pupils in the population in grade k, district j, and stratum i

where

i = stratum I, II, III or IV

$j = 1,2,\ldots,n_i$

n_i denotes the number of sampled school districts in stratum i.

The inflation factors applied to weight pupil data to national totals are equal to the product of the pupil weights and stratum weights applied to those data.

Item Response

The effect of response rate or response bias on the results of survey research must be considered for both return of the questionnaire itself and also response on individual items on the questionnaires that are returned. In this evaluation analyses were performed on composite items formed from the responses on the original questionnaires. Rather than tabulate separately response rates for questionnaire items or for composite items, each contingency table contains "no response" as a separate classification. Such a cross tabulation allows examination of the covariance of failure to response and categories of the other composite variables.

Precision

The 1969 Survey of Compensatory Education was designed to produce precise estimates of the true totals and proportions. A measure of the precision of data is given by the coefficient of variation (C.V.) which equals the ratio of the standard error of the statistic to the corresponding population proportion P then

$$C.V.(p) = \frac{\sigma_p}{P}$$

Each standard error represents 100·C.V.(p) percent of the population parameter. A confidence interval calculated using the standard error can be interpreted in terms of the precision relative to the parameter. For example if the coefficient of the variation is .05 then the parameter is covered by approximately 95% of the confidence intervals containing values that differ from the sample estimate by less than 10 percent of the population parameter.

The procedures used for gathering data for the 1969 Survey closely paralleled the procedures used for the 1968 Survey and therefore would produce comparable precision in the data. For a discussion of use of the coefficient of variation to establish the adequacy of the precision in the data from the 1968 Survey of Compensatory Education see Education of the Disadvantaged (Methodology Appendix), Fiscal Year 1968.

In one sense, the statistics from successive Surveys of Compensatory Education are becoming increasingly precise, even though the sample of pupils drawn each year remains at approximately 100,000. Many of the parameters being estimated from the data can be expected to show virtually no change from one year to the next. For example, percents of male teachers in grade six, pupil race, etc., are relatively stable in the population to which inferences are made. Other parameters are changing in known ways. For example, through the consolidation of school districts, small districts are disappearing and larger districts are being created at a steady rate.

Such antecedent knowledge represents "prior information"--in a Bayesian sense--about values of parameters. This prior information can be used either to increase the precision of estimates of parameters for a fixed sample size or to allow the reduction of sample size in future Surveys of Compensatory Education without loss of precision in estimation. In view of the cost of maintaining a yearly survey system of over 100,000 pupils, there is much to recommend the latter alternative.

In brief, the sampling plan involved sampling at random every Title I district with enrollment above 40,000, approximately every fifth district with enrollment above 40,000 and 9,000 pupils, approximately every fifteenth district size of 3,000-8,999 pupils, and about every 65th district size of 300-2,999 pupils. The proportionally more exhaustive sampling of the larger districts is quite efficient statistically. Since very large districts are relatively rare, sampling them in proportion to their representation in the population of all districts (e.g., in this survey only 7 out of 100 districts would have enrolled more than 40,000 pupils if proportional sampling had been used) runs too great a risk of drawing an unrepresentative group of large districts (e.g. New York City, Los Angeles and Philadelphia).

Once a district was sampled, approximately 70 percent of the Title I elementary schools in that district were randomly sampled. Once a school has been chosen, all teachers in grades two, four and six were sampled and each teacher was instructed to draw a random sample of, on the average, five pupils in that teacher's class. The resulting samples of districts, schools, teachers, and pupils are described in Table B.1.

Table B. 1.

Numbers* of Sampled Districts, Schools, Teachers (Grades two, four and six) and Pupils (Grades two, four and six) Classified by District Size.

	District Size				
	Above 40,000	9,000-40,000	3,000-8,999	300-2,999	Total
Title I Districts	91	124	121	102	438
Title I Elem. Schools	1,454	876	438	152	2,920
Teachers (Grades two, four and six)	12,683	5,911	2,636	837	22,067
Pupils (Grades two, four and six)	60,089	27,707	12,435	3,849	104,080

The population to which the 1969 Survey data generalize consists of approximately 9,236 school districts. Estimated numbers of districts, schools, teachers and pupils in the population of 9,236 school districts are tabulated in Table B.2.

Table B. 2.

Estimated* Numbers of Districts, Elementary Schools, Teachers and Pupils in the Population of 9,236 Districts to Which Data from The 1969 Survey Generalize

	District Size (Enrollment)				
	Above 40,000	9,000-40,000	3,000-8,999	300-2,999	Total
Title I Districts	92	658	1,917	6,569	9,236
Title I Elem. Schools	3,266	6,607	10,167	12,678	32,719
Teachers (Grades one through six)	64,842	98,112	127,380	141,656	431,990
Teachers (Grades two, four and six)	32,421	49,056	63,690	70,828	215,995
Pupils (Grades two, four, and six)	886,608	1,265,689	1,722,663	1,859,016	5,733,976
Pupils (Grades one through six)	1,773,216	2,531,378	3,445,326	3,718,032	11,467,952

* The figures in this table for teachers and pupils were obtained by doubling the exact numbers of teachers and pupils in grades two, four and six in the population. Hence, the figures for teachers should be slight overestimates; the figures for pupils should be more accurate.

Types of Data

Three types of question were asked of teachers and principals responding to the 1969 Survey questionnaires. One category of question concerned factual information which, with rare exception, was readily available on file in schools or school districts. Such information included pupils' birth dates, pupils' grade levels, attendance information, numbers of school personnel, and age of school buildings. The errors inherent in the reporting of such data are due almost solely to carelessness in transposing information from existing files to the survey questionnaires. Such transposition errors are generally minimal.

Another category of question requested factual data which was clearly not available in the files of all schools or school districts. In such cases, the respondent was advised to estimate the proper value and to respond to the best of his ability, unless he had absolutely no basis for providing a response. Examples of questions in this category include the income of the families of pupils, the quality of pupils' housing, and the numbers of persons residing in pupils' household. The existence of these data in files was not consistent in all school districts, and required teacher estimation in a large percentage of the cases. It should be realized that questions requiring estimation by the respondent are subject to bias. For example, teachers may underestimate or overestimate pupils' family incomes on the basis of misinterpretation of available cues, if such data are not available in school files.

The third type of question in the 1969 Survey required an opinion of the respondent. These questions did not assume the availability of recorded data and the value of their answers is not diminished by the unavailability of such data. Two key questions requiring the opinions of teachers were "Considering his ability, how far do you think this pupil could go in school?" and "Considering his present attitude, how far do you think this pupil will go in school?".

Sources and Extensiveness of Available Data

The measures used in the 1969 Survey, like those used in the 1968 Survey, rely on other persons to report valid and reliable information. Both recorded information (primarily from student files) and personal opinion were needed in completing the survey questionnaires. The 1968 Survey Report contains a discussion of the results of a Supplementary Survey and teacher interview studies which examined the sources and extensiveness of the data reported on the 1968 questionnaires.

Those studies found that information about the compensatory education program, including costs, was available to persons from individual schools but was usually located in the school district office. Information on individual students tended to be scattered and often lost due to students having transferred. Some information such as socioeconomic status was often unavailable. Where estimation took place accuracy and bias become important considerations.

Data Editing

The survey questionnaires were processed by National Computer Systems, Inc. To insure that the data supplied in the questionnaires were usuable and consistent, National Computer Systems followed a careful plan for editing the data. All four sets of questionnaires--pupil, teacher, principal, and district-- were coded by the individual completing them. On the basis of these code numbers, pupil responses were matched to teacher responses and school principal responses. During the processing of the questionnaires, the data were examined, by computer, for obvious errors and inconsistencies against editing specifications provided by the Office of Education. Checks consisted of matching responses against specified tolerance limits, intra-record comparison of a number of items and, on a more limited basis, inter-record comparisons.

Quality of Data

Forty checks were conducted on the questionnaire data. The data were compared internally for consistency in some instances or with logical a priori criteria in others. These checks were performed on samples from the data available from the original survey. The results are not weighted by inflation factors to yield estimates of error rates in the population.

Data Checks

The contingency tables were used to answer evaluative questions concerning context description, needs analysis, and the allocation of resources.

Nearly all contingency tables were bivariate tabulations of frequencies of pupils, teachers, schools or districts. Few trivariate and multivariate contingency tabulations were performed. The sole purpose in conducting trivariate and higher-way crosstabulations of categorical variables is to find varying patterns of bivariate relationships across categories of one or more additional variables. Such varying patterns in bivariate relstionship are equivalent to second and higher order interactions in analysis of variance factorial designs: Those familiar with the application of factorial experimental designs in the social sciences are well aware of the infrequency with which second or higher order interactions are found.

No large investment in trivariate and multivariate crosstabulations was made since it was regarded as unlikely that many important relationships would be found in which bivariate relationships vary across categories of a third factor.

Pupil Data Checks: These validity checks were performed on a sample of 913 at grade two, 922 at grade four, and 890 at grade six. This is a sample of approximately 2.5 percent of the total sample of pupils. The total errors and percent of errors were computed on this sample.

			Total Errors Grades			% Errors Grades		
Check #	Questionnaire Number	Description of Error	2	4	6	2	4	6
1	P-3	Any birth year prior to 1958 for grade two, 1956 for grade four, and 1954 for grade six	19	17	8	2.0	1.8	0.9
2	P-10	Pupil said to be of one of the minority groups and the group not marked or a pupil said to not be of a minority group and one is marked	3	6	7	0.3	0.7	0.8

Check #	Questionnaire Number	Description of Error	Total Errors Grades			% Errors Grades		
			2	4	6	2	4	6
3	P-12B vs. P-13A	A pupil's family receiving welfare and with a reported gross yearly income of $4,501 or greater	27	25	34	3.0	2.7	3.8
4	P-25	A pupil reported to be participating in math for the disadvantaged and enrichment math	6	8	9	0.7	0.9	1.0
5	P-25	A pupil reported to be participating in reading for the disadvantaged and enrichment reading	16	19	12	1.7	2.0	1.3
6	P-25	A pupil reported to be participating in language for the disadvantaged and enrichment language	17	11	9	1.9	1.2	1.0
7	P-27B vs. P-27C	An instructional group size reported for the same pupil in reading for the disadvantaged and enrichment reading	17	22	17	1.9	2.4	1.9
8	P-30 vs. P-31	A pupil not participating in cultural enrichment programs or this information not known and some participation by time reported	10	14	19	1.0	1.5	2.1
9	P-32 vs. P-33	A pupil not participating in health programs or this information not known and participation in a specific type of health program reported	86	70	64	9.4	7.6	7.2
10	P-36 vs. P-32, P-33, P-34 & P-35	Benefits reported from ancillary service program when the pupil did not participate in any ancillary programs or this information not known	56	49	46	6.1	5.3	5.2
11	P-37 vs. P-38	No participation in summer reading programs or this information not known and the length of time (greater than 0) that this pupil participated in summer reading programs	3	2	3	0.3	0.2	0.3

Check #	Questionnaire Number	Description of Error	Total Errors Grades 2	4	6	% Errors Grades 2	4	6
12	P-39 vs. P-40	No participation in summer cultural enrichment programs or this information not known and a number (greater than 0) of hours of participation	4	6	4	0.4	0.7	0.4
13	P-41B vs. P-44	A pupil reported to need improvement in completing assignments and said to complete tasks that are assigned	20	18	25	2.2	1.9	2.8
14	P-41G vs. P-42D	A pupil reported needing reduction in disruptive behavior and said to not spend time in disruptive behavior	25	19	12	2.7	2.0	1.3
15	P-41 vs. P-23B	A pupil reported to need improvement in reading and this pupil not designated as having a critical need in reading for the next year	23	36	46	2.5	3.9	5.2
16	P-42	Total percent of time spent on all class activities exceeding 120 percent	4	7	4	0.4	0.8	0.4
17	P-46 vs. P-47	A pupil reported to not have had achievement tests since 9/67 and pre and/or posttest administration dates reported after 9/67	51	62	62	5.6	6.7	7.0
18	P-47 vs. P-48	No achievement tests administered between 9/67 and 12/68 but month and year of pretest reported during this time	32	57	46	3.5	6.2	5.2
19	P-48	A pretest date of administration reported prior to 9/67 which conflicts with instructions	9	11	12	1.0	1.2	1.3

The validity checks performed on pupil questionnaire data reveals errors of a low magnitude at all three grade levels. There were no checks that yielded an error rate of greater than 10 percent and 78.9

percent were less than 5 percent; therefore, the analyses performed on these data would probably not be greatly affected by the errors in reporting of the data.

Teacher Data Checks: These validity checks were performed on a sample of 550 teachers. This is a sample of 2.5 percent of the total sample of approximately 22,000 teachers. The total errors and percent errors were computed on this sample.

Check #	Questionnaire Number	Description of Errors	Total Errors	% Errors
20	T-3 & T-4	Failure to report total years of experience and/or years of experience at this school	5	0.9
21	T-6	Failure to report whether or not a member of a minority group and indication of non-minority membership but said to be of the Negro race	10	1.8
22	T-9 vs. T-10	No formally organized training for teaching the academically disadvantaged reported but claimed to have a number of hours in this activity greater than 0 since June 1, 1968	38	6.9
23	T-18A to T-18C	Summary of class membership; number in October plus number added vs. number in April plus losses	16	2.9
24	T-23 & T-24	Failure to report type of program of instruction and/or an assignment to regular program but also reported teaching programs for enrichment and for the disadvantaged	36	6.5
25	T-30	More objectives were checked as being emphasized than the instructions allowed.	40	7.2

The percents of errors are not considered to be of a magnitude to invalidate their use in analyses.

School Data Checks: These validity checks were performed on a sample of 726 out of a total of 2920 schools. This is a sample of 24.9 percent of the total sample of schools. The total errors and percent errors were computed on this sample.

Check #	Questionnaire Number	Description of Errors	Total Errors	% Errors
26	PR-4 vs. PR-14	At least one non-graded class is taught in the school, but no non-graded instructional organization is reported	9	1.2
27	PR-15A vs. PR-14	PR-15A shows grade two as graded but PR-14 shows grade two as non-graded	12	1.7
28	PR-15A vs. PR-14	PR-15A shows grade six as graded but PR-14 shows grade six as non-graded	3	0.4
29	PR-15A vs. PR-14	PR-15A shows grade four as graded but PR-14 shows grade four as non-graded	6	0.8
30	PR-19A vs. PR-19B	The total number of classrooms does not equal the total number of various categories of classrooms	324	44.6
31	PR-20d vs. PR-21	Indication of "no learning laboratories" accompanied by a list of learning laboratory facilities	24	3.3
32	PR-20f vs. PR-22	Indication of "no instructional materials production center" is accompanied by a list of materials which can be produced	28	3.9
33	PR-31 vs. PR-30	Percent of pupils below grade level is indicated but "no test results available" is reported	12	1.7

Comments:

Checks 26-29 indicate a very high degree of validity of those items which describe the instructional program of the school. (Items PR-14,15,16) Check 30 indicates that item PR-19 was largely misinterpreted by the principals. Part A of item PR-19 asks for the Total number of classrooms by size (i.e., large group, regular, small group). Some principals apparently interpreted part B as an exclusive breakdown while others interpreted it as inclusive. In addition, some large group areas, such as conference rooms or learning laboratories, may not have been included in part A as classrooms. Part A of item PR-19 is probably the most accurate measure of the physical size of the school. The errors in checks 31 and 32, while not serious, also indicate the probable misinterpretation. Some schools may have extensive equipment and facilities of the kind found in instructional materials centers or learning laboratories, while not having a central IMC or self-contained learning laboratory. Check 33, while again not indicating serious error, shows possible misreading of items PR-30 or PR-31. The percent of pupils below grade level should have been estimated from the tests indicated in item 30. A few principals may not have understood the contingency, and marked item 31 after not marking item 30.

School District Data Checks: These validity checks were performed on the total sample of 438 districts. The total errors and percent errors were computed on the sample.

Check #	Questionnaire Number	Description of Errors	Total Errors	% Errors
34	D-IE vs. D-6E	Total of public Title I schools in the district given as greater than total public schools in the district	3	0.7
35	D-3A	Posttest date of grade four is in error if earlier than 1/1/68	35	8.0
36	D-3A	Pretest data of grade two is in error if later than 12/31/68	19	4.3
37	D-9 vs. D-8	Any entry in "total number of advisory committees" should be accompanied by "committee used."	14	3.2
38	D-9 vs. D-10	An indication of advisory committee used not accompanied by whether or not they supplied assistance and/or advice	1	0.2
39	D-10	Indication of advice or assistance by advisory committees and a no response for any advice or assistance	3	0.7

Check #	Questionnaire Number	Description of Errors	Total Errors	% Errors
40	D-16 vs. D-15	Any part of D-16 marked "yes" and D-15 not showing an entry for "Regular classroom teachers"	0	0

With the exception of errors involving pretest and posttest dates, the data from the District Questionnaire seems to be of acceptable validity. This will not affect the gain-score analyses because the pretest and posttest administration dates were obtained from the pupil questionnaire.

Reading Gain-Score Analyses

Achievement test scores obtained for the 1969 Survey came from existing records of schools in the sample, thus additional testing was not required. Test data were requested for parallel forms of the same test battery administered to a pupil at the beginning and end of the 1968-69 school year as most preferable. Other pre- and post-program data were obtained where "matched" test scores were not available.

Some posttest scores were not available at the time teachers completed the survey questionnaires; such data were received by the evaluation staff separate from all other survey data. Identification for these data tapes was incomplete, eliminating them from use with previously obtained data and decreasing the total usable gain-score data. Of the 104,080 pupil records obtained in the 1969 Survey, only 7½ percent contained achievement test scores analyzable for reading gain-score analyses. This is about 1.5 percent less than was available for such analyses from the 1968 Survey of Compensatory Education.

Achievement scores were reported for twenty specified achievement test batteries, however, only seven grade by test files met requirements of sufficient sample sizes for the statistical analyses performed. Basically these requirements were that the test scores represent parallel forms of the same test battery administered between September, 1967 and December 1968 (for pretests) and after January 1, 1969 (for posttests), that both scores were reported in grade-equivalent form, and that any test file at a given grade contain at least 500 pupils.

The reading achievement gain-score files were of the following sizes:

Grade	Achievement Test Battery	Number of Pupils
2	Metropolitan	1,113
2	Stanford	1,092
4	Metropolitan	1,621
4	Iowa Tests of Basic Skills	1,064
6	Metropolitan	1,047
6	Iowa Tests of Basic Skills	1,085
6	Stanford	762
TOTAL		7,784

Virtually nothing can be learned about the over-all impact of compensatory reading programs for the disadvantaged from this biased subsample of less than 8 percent of the pupils surveyed in the 1969 Survey. It would be indefensible to regard the results of the reading achievement test data analyses as supporting or failing to support any contention about the impact of compensatory program participation on pupils' reading performance. There simply was not sufficient data available for drawing any general conclusions.

However, even highly select subsamples of reading achievement data can support important data analyses of limited generality. Data analyses performed on reading achievement test data from the 1968 Survey raised the question of whether an impact upon reading achievement of compensatory programs can be shown even for highly selected subsamples of pupils. These earlier analyses failed to reveal any consistant evidence of increased reading achievement resulting from participation in reading programs for disadvantaged pupils. In view of the failure of numerous previous analyses on similar data to show any significant program impact, the demonstration of such an impact with new data would be of interest no matter how select the subsample of pupils. Such was the rationale for pursuing the analysis of program impact on data which can not be generalized to any nation-wide conclusion about compensatory education programs.

Achievement Tests

Only three achievement test manufacturers were represented in the seven grade by test files available for gain-score analyses. The general characteristics of these tests are examined in the following descriptive comparisons.

Objectives of reading in a school system should not be expected to be the same for grade one as they are for grade eight. In the early years emphasis is usually upon the mechanics of reading. Comprehension and recall are usually emphasized in the intermediate grades. Only in the upper grades are functional reading abilities and recreational reading habits generally considered. Following is a generalized outline of reading objective for grades one through eight:*

I. Developmental Reading Abilities
    A. Mechanics
    B. Reading comprehension abilities
II. Functional Reading Abilities
    A. Knows how to locate information
    B. Functional comprehension skills
    C. Uses organizing skills that aid in remembering what is read
    D. Remembers what is read
III. Recreational Reading Habits
    A. Shows interest in reading
    B. Has desireable attitudes toward reading

Objectives concerning interests in reading, attitudes toward reading, and use of organizing skills which help in remembering what is read are not assessed by any of the reading tests from which survey data were obtained. Nor do the ITBS, the Metropolitan, and the Stanford batteries measure adjustment of reading rate according to purpose and difficulty of the material. None of these three tests actually appraise memory for what is read. These skills are seldom measured by standardized reading tests.**

The data obtained from the three test batteries named emphasize vocabulary and comprehension skills, although they offer some appraisal of sight vocabulary and word analyses skills. The items of the Iowa and Metropolitan tests are somewhat broader in scope, representing more general reading objectives than the Stanford tests, partly because the

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* From Robert Thorndike and Elizabeth Hagen. Measurement and Evaluation in Psychology and Education, Chapter 9, "Standardized Achievement Tests." New York: John Wiley and Sons, Inc., 1969. pp 250-292.

** Ibid.

Stanford includes even more items from the listed objectives in sections of the battery other than reading, so that appraisal of these competencies is not possible from the survey data on reading scores. Since items representing objectives II-A and II-B are all included in such sections as "Social Studies" or "Work Study Skills", the reading data for the 1969 Survey is essentially limited to Level I, "Developmental Reading Ability." Since the programs under evaluation primarily provided compensatory offerings, the emphaiss on "basic" and "early" skills is probably justified.

It should also be noted that simple inclusion of a reading objective in the list of those covered by a test battery, does not indicate how specifically or adequately it is covered; rather it indicates that at least one item in that category is included. For example, the type and length of stimulus material (passages) vary from two or three sentences to 200-350 words in the three tests used in the gain-score analyses, and only the Iowa tests use poetry, plays and letters as part of the reading material.

The reading achievement test data are not nationally representative, nor even representative of all Title I schools since most analyzable scores for achievement gains came from large urban districts. The distribution of pupils with useable reading achievement test data by district enrollment is as follows:

	Strata				
	I (40,000 or more)	II (9,000-39,999)	III (3,000 8,999)	IV (300-2,999)	TOTAL
No. of pupil records	3,988	2,422	988	386	7,784
%age of Total	51	31	13	5	100

It is also true that minority groups were overrepresented among pupils having matched pre and posttest achievement data. Only slightly more than half of these students were non-minority compared to eighty percent nationally.* Exact percentages of non-minority (whites) among each of the seven "grade by test type" groups of pupils are as follows:

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*HEW Newsletter, Jan. 4, 1970

Test	%age of non-minority pupils
Grade 2	
Metropolitan Achievement	52.5
Stanford Achievement	65.8
Grade 4	
Metropolitan Achievement	36.8
Iowa Tests of Basic Skills	56.0
Grade 6	
Metropolitan Achievement	37.9
Stanford Achievement	67.0
Iowa Tests of Basic Skills	58.3

A large proportion of these minority students are Negro. These disproportionate numbers are indicative of the fact that over half of the analyzable data came from districts with over 40,000 students; these 92 districts essentially representing the 100 largest districts in the nation which have an average of 31.2 percent Negro students enrolled,** as opposed to Title I supported schools in general (e.g., in grades two, four, six, 72 percent were white while 22 percent were Negro and 6 percent were of other minority groups).

In the following tables are presented data on the source of reading achievement gain-score data by state and school district size for each grade by test combination used in the analyses.

** HEW Newsletter, Jan. 4, 1970

Source of reading achievement gain data for the 1969 survey of compensatory education programs (Entries are numbers of analyzable pupil records).

Grade 2

Metropolitan Achievement Tests

	Strata			
State	I	II	III	IV
Alabama				
Alaska				
Arizona				3
Arkansas				
California				
Colorado				
Connecticut		16	33	
Delaware			20	
Dist. of Columbia				
Florida	110			
Georgia				3
Hawaii				
Idaho		1		
Illinois	3	7		
Indiana		94		1
Iowa				6
Kansas				
Kentucky	83			
Louisiana				
Maine				
Maryland	5			
Massachusetts		107		
Michigan				
Minnesota				9
Mississippi				
Missouri		27		
Montana				6
Nebraska	42			

Strata

State	I	II	III	IV
Nevada				
New Hampshire				
New Jersey	67			5
New Mexico		38		
New York	23	77	9	1
North Carolina			9	
North Dakota				
Ohio		43		
Oklahoma	1			
Oregon				2
Pennsylvania	61		1	
Rhode Island				
South Carolina				
South Dakota				
Tennessee	165			
Texas		21		5
Utah				
Vermont				
Virginia				
Washington			3	
West Virginia				
Wisconsin				
Wyoming		6		
Totals	560	437	45	41
% of Sample	50	39	7	4

Source of reading achievement gain data for the 1969 survey of compensatory education programs (Entries are numbers of analyzable pupil records).

Grade 2

Stanford Achievement Tests

State	Strata I	II	III	IV
Alabama	3			
Alaska			3	
Arizona				
Arkansas				
California	184	124	82	14
Colorado	3			
Connecticut				
Delaware				
Dist. of Columbia				
Florida	20			5
Georgia		31		
Hawaii				
Idaho		1		
Illinois			21	18
Indiana		41	16	5
Iowa				3
Kansas				4
Kentucky	70			9
Louisiana				
Maine				
Maryland	26			
Massachusetts			9	
Michigan				
Minnesota			10	4
Mississippi		44		
Missouri				3
Montana				
Nebraska				

	Strata			
State	I	II	III	IV
Nevada				
New Hampshire				
New Jersey				
New Mexico				
New York		8	40	6
North Carolina		3		
North Dakota				
Ohio			74	9
Oklahoma				12
Oregon				
Pennsylvania		14	2	4
Rhode Island				
South Carolina				
South Dakota				
Tennessee		20	2	
Texas		37	28	8
Utah				
Vermont				
1 Virginia			15	
Washington				7
West Virginia	17	1		
Wisconsin			21	
Wyoming				
Totals	333	324	323	111
% of Sample	30	30	30	10

Source of reading achievement gain data for the 1969 survey of compensatory education programs (Entries are numbers of analyzable pupil records).

Grade 6

Iowa Test of Basic Skills

	Strata			
State	I	II	III	IV
Alabama				
Alaska			4	
Arizona				
Arkansas				7
California	11			
Colorado		12		
Connecticut		2	29	
Delaware				
Dist. of Columbia				
Florida				
Georgia		41		
Hawaii				
Idaho				
Illinois		10		2
Indiana		82	4	
Iowa		64		15
Kansas				12
Kentucky				
Louisiana	8	12		
Maine				
Maryland	1	1		
Massachusetts		57		
Michigan	1			
Minnesota	61			10
Mississippi				
Missouri	7	39		
Montana				
Nebraska				3

	Strata			
State	I	II	III	IV
Nevada				
New Hampshire				
New Jersey		13	19	4
New Mexico		43		
New York	1		4	
North Carolina		50		
North Dakota				
Ohio		13	41	
Oklahoma		33		
Oregon				
Pennsylvania	292		19	
Rhode Island				
South Carolina				
South Dakota				
Tennessee				
Texas	2			
Utah		14		
Vermont				
Virginia				
Washington				
West Virginia				
Wisconsin				
Wyoming		7		
Totals	419	493	120	53
% of Sample	39	45	11	5

Source of reading achievement gain data for the 1969 survey of compensatory education programs (Entries are numbers of analyzable pupil records).

Grade 4

Metropolitan Achievement Tests

	Strata			
State	I	II	III	IV
Alabama				
Alaska				
Arizona				6
Arkansas				
California				
Colorado	2			
Connecticut		77		
Delaware			12	
Dist. of Columbia				
Florida	73			
Georgia				
Hawaii				
Idaho		99		
Illinois	40	3		
Indiana	3			
Iowa	8			
Kansas				
Kentucky	86			
Louisiana	3			
Maine				
Maryland				
Massachusetts	75	65		
Michigan				
Minnesota				
Mississippi				
Missouri				
Montana				
Nebraska				

	Strata			
State	I	II	III	IV
Nevada				
New Hampshire				
New Jersey	84			
New Mexico				
New York	424	43	9	
North Carolina			16	
North Dakota				
Ohio	4	42		
Oklahoma	22			6
Oregon				
Pennsylvania	53			
Rhode Island				
South Carolina				
South Dakota				
Tennessee	271			
Texas	79	17		
Utah	5			
Vermont				
Virginia				
Washington				
West Virginia				
Wisconsin				
Wyoming				
Totals	1222	346	37	16[illegible]
% of Sample	76	21	2	1

Source of reading achievement gain data for the 1969 survey of compensatory education programs (Entries are numbers of analyzable pupil records).

Grade 4

Iowa Test of Basic Skills

	Strata			
State	I	II	III	IV
Alabama				
Alaska				
Arizona				
Arkansas				7
California	4		10	
Colorado		5		
Connecticut			31	
Delaware				
Dist. of Columbia				
Florida				
Georgia		29		
Hawaii				
Idaho				
Illinois				5
Indiana		71	5	
Iowa		58		18
Kansas				14
Kentucky				
Louisiana		17		
Maine				
Maryland				
Massachusetts		49		
Michigan				
Minnesota	62			16
Mississippi				
Missouri	3	32		
Montana				
Nebraska	45			4

	Strata			
State	I	II	III	IV
Nevada				
New Hampshire				
New Jersey		12	26	4
New Mexico		41		
New York			23	
North Carolina		70		
North Dakota				
Ohio			12	
Oklahoma		36		
Oregon				
Pennsylvania	319		25	
Rhode Island				
South Carolina				
South Dakota				
Tennessee				
Texas	1	1		
Utah				
Vermont				
Virginia				
Washington				
West Virginia				
Wisconsin				
Wyoming		9		
Totals	434	430	130	68
% of Sample	41	41	12	6

Source of reading achievement gain data for the 1969 survey of compensatory education programs (Entries are numbers of analyzable pupil records).

Grade 6

Stanford Achievement Tests

	Strata			
State	I	II	III	IV
Alabama	20			
Alaska			5	
Arizona				
Arkansas				4
California	18	2	6	
Colorado	37			
Connecticut		32		
Delaware				
Dist. of Columbia				
Florida	10		8	2
Georgia				
Hawaii				
Idaho			19	
Illinois			37	8
Indiana	1		9	5
Iowa				
Kansas			7	2
Kentucky	24		39	36
Louisiana				
Maine				
Maryland				
Massachusetts			55	
Michigan		12		
Minnesota				
Mississippi		51		
Missouri				
Montana				
Nebraska				

	Strata			
State	I	II	III	IV
Nevada				
New Hampshire				
New Jersey				
New Mexico				
New York		17	9	
North Carolina			24	
North Dakota				
Ohio	109		15	
Oklahoma				16
Oregon				
Pennsylvania		14	20	6
Rhode Island				
South Carolina	1			
South Dakota				
Tennessee				
Texas	1		7	8
Utah	18			
Vermont				
Virginia				
Washington			5	4
West Virginia	4	16		
Wisconsin			19	
Wyoming				
Totals	243	144	284	91
% of Sample	32	19	37	12

Source of reading achievement gain data for the 1969 survey of compensatory education programs (Entries are numbers of analyzable pupil records).

Grade 6

Metropolitan Achievement Tests

State	Strata I	II	III	IV
Alabama				
Alaska				
Arizona				
Arkansas				
California				
Colorado				
Connecticut				
Delaware				
Dist. of Columbia				
Florida	65			
Georgia				
Hawaii	2			
Idaho		98		
Illinois	44			
Indiana				
Iowa	1			
Kansas				
Kentucky	68			
Louisiana	1			
Maine				
Maryland				
Massachusetts	22	51		
Michigan				
Minnesota				
Mississippi				
Missouri				
Montana				
Nebraska				

	Strata			
State	I	II	III	IV
Nevada				
New Hampshire				
New Jersey	17			
New Mexico				
New York	235	30		6
North Carolina			17	
North Dakota				
Ohio	2	69		
Oklahoma	4			
Oregon				
Pennsylvania	11			
Rhode Island				
South Carolina				
South Dakota				
Tennessee	250			
Texas	55			
Utah				
Vermont				
Virginia				
Washington				
West Virginia				
Wisconsin				
Wyoming				
Totals	777	248	17	6
% of Sample	74	24	2	.0

Definition of Gain-Scores

Residual gain scores were computed with adjustments for differing times of test administration. The pre-program reading achievement scores in the seven analyzable data files were obtained between the months of September 1967 and December 1968 while the post-program scores were based on tests administered after January 1, 1969. Grade-equivalent scores were reported by grade and month (e.g., posttest score representative of the norm score for a pupil in grade two during the month of April, would be reported as 2.7 while a score for such test given at the end of September as a pretest would be reported as 2.1).

The analysis of pupil achievement change has long been a vexing problem for educational researchers. The literature on achievement gain analysis is voluminous, and major differences in approach to gain analysis exist among leading psychometric theorists. The most obvious indicator of pupil achievement gain, the simple difference between post-program and preprogram scores, is unsatisfactory. The unreliability of available achievement measures leads to a phenomenon called "regression toward the mean" when simple score differences are employed as a measure of achievement change. If low-scoring pupils are selected for participation in compensatory programs, and high-scoring pupils are excluded from such participation, participants would "gain" in achievement relative to nonparticipants, independent of program effects.

The achievement gain procedure employed for this report to analyze change was shaped by a desire to eliminate the spurious regression problem. To successfully eliminate the problem, it is necessary to establish an achievement gain reference point such that the distribution of gaining and losing pupils is symmetric at every value of initial achievement score. Within each parallel preprogram and postprogram test tile, a least-squares regression plane was estimated for all pupil test scores, using postprogram test score as a dependent variable and preprogram test score and the time interval between the administration of preprogram and postprogram tests as independent variables. Change was then measured as the deviation of actual postprogram test score from predicted postprogram test score for each pupil. A positive difference, subtracting predicted score from actual score, indicated high achievement gain; a negative difference, low achievement gain. Mathematically, the gain estimate employed is as follows:

$$\text{Gain}_i = \text{Post}_i - \text{Predicted Post}_i$$

$$\text{Predicted Post}_i = \beta_0 + \beta_1(\text{Pre}_i) + \beta_2(\text{Elapsed time})_i.$$

In the above pair of equations,

a. Gain_i denotes estimated gain in reading achievement for the ith pupil.

b. Post_i denotes postprogram reading achievement score of the ith pupil.

c. Predicted Post_i denotes predicted postprogram reading achievement score for the ith pupil.

d. $(\text{Elapsed time})_i$ denotes the time interval (in months) between administration of preprogram and postprogram reading achievement tests to the ith pupil.

e. pre_i denotes preprogram reading achievement score of the ith pupil.

f. β_0, β_1 and β_2 denote minimum variance, unbiased regression coefficients.

The definition of "gain" adopted in this report, insures that gain scores will be uncorrelated both with the pupil's preprogram score and with the amount of time intervening between pretest and posttest (by merit of the fact that the residuals in any regression equation are uncorrelated with each independent variable). In the sense of "uncorrelatedness" then, pupils' gain scores were defined to be independent of their pretest score and the amount of time intervening between pretest and posttest. The validity of these statements rests upon the assumption that the relationship of pretest to posttest and of elapsed time to posttest is linear. That these relationships were basically linear for the seven groups of gain scores can be seen in the following Figures B1-B7.

Since the data available on achievement gains did not form a nationally representative sample, the major objective of the analyses of these data was to form hypotheses on the causes and correlates of achievement gain. Had nationally representative data been provided,

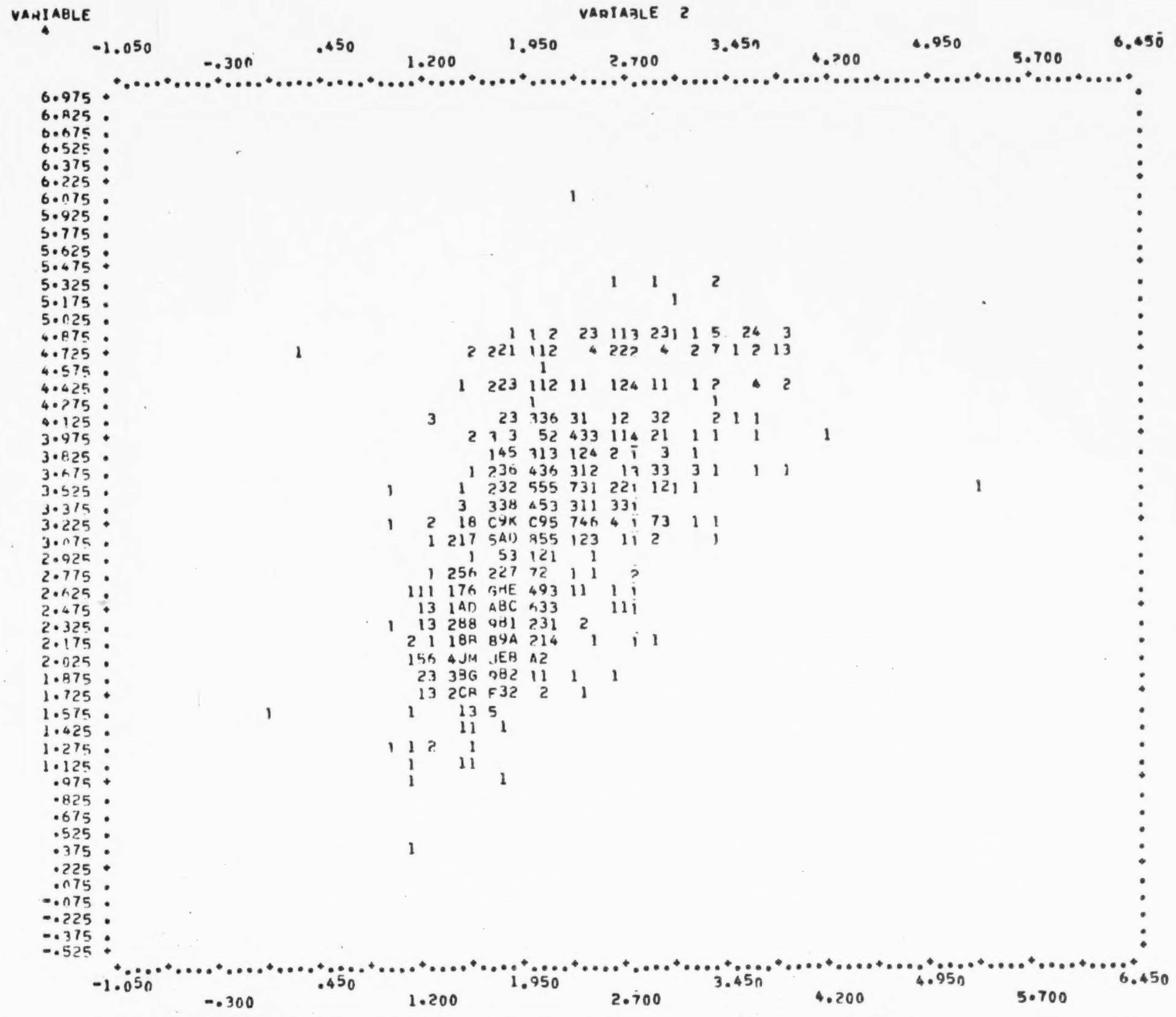


Figure 1. Grade 2- Metropolitan Achievement Test.
Variable 2 is pre-test; variable 4 is posttest.

2

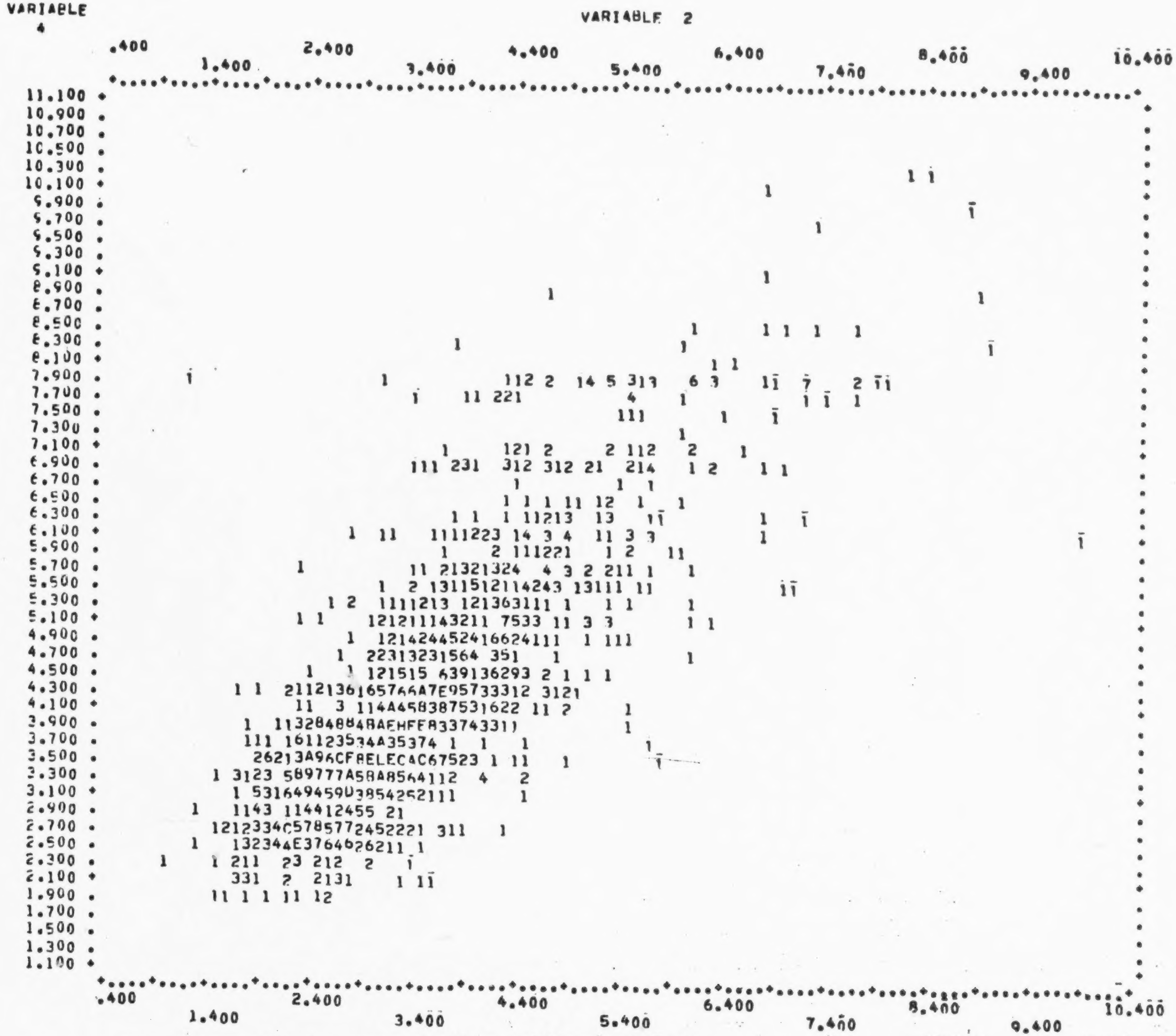


Figure 2. Grade 4 - Metropolitan Achievement Test.
Variable 2 is pretest; variable 4 is posttest.

3

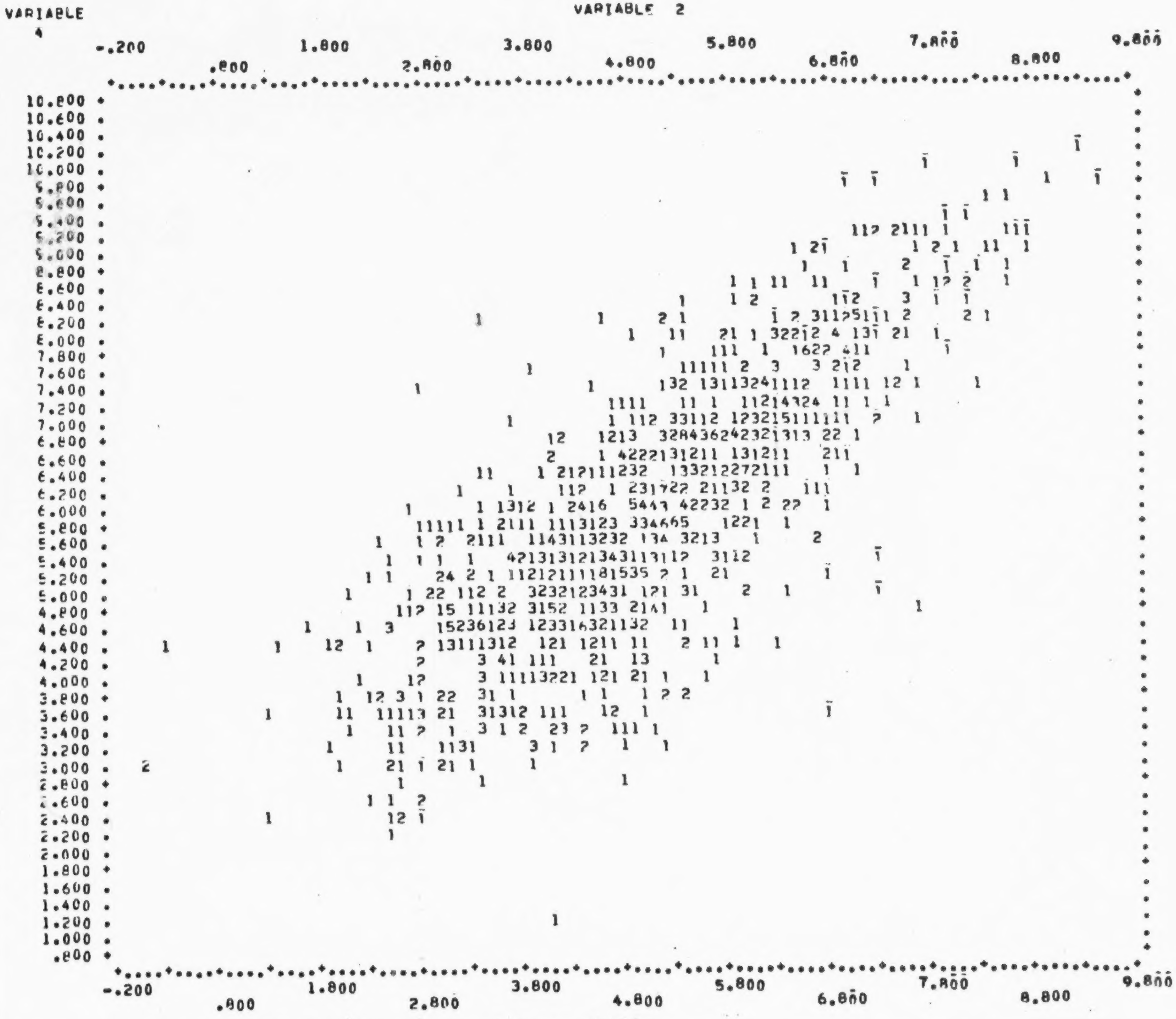


Figure 3. Grade 6 - Iowa Tests of Basic Skills.
Variable 2 is pretest; variable 4 is posttest.

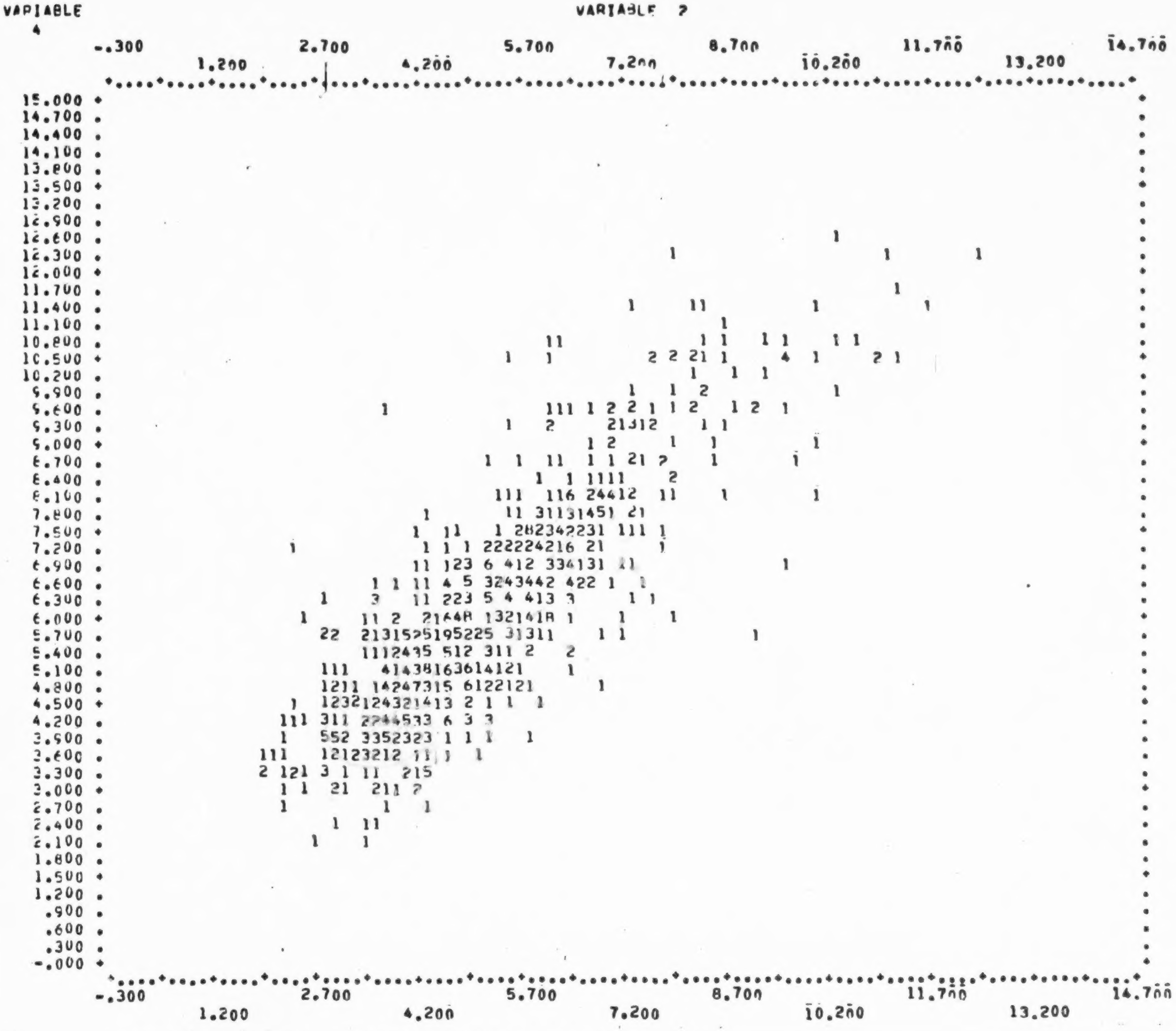


Figure 4. Grade 6 - Stanford Achievement Test.
Variable 2 is pretest; variable 4 is postest.

5

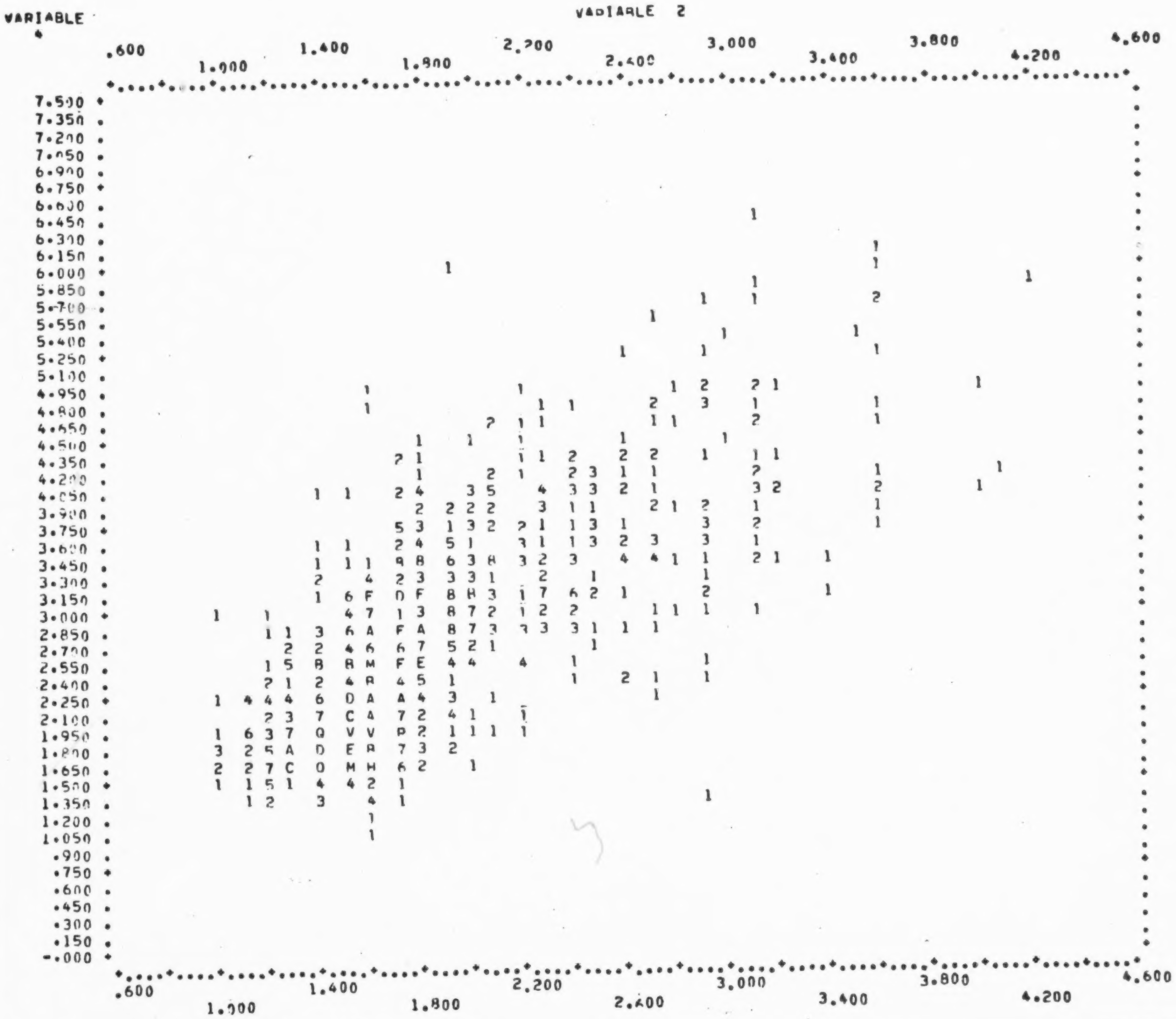


Figure 5. Grade 2 - Stanford Achievement Test.
Variable 2 is pretest; variable 4 is posttest.

6

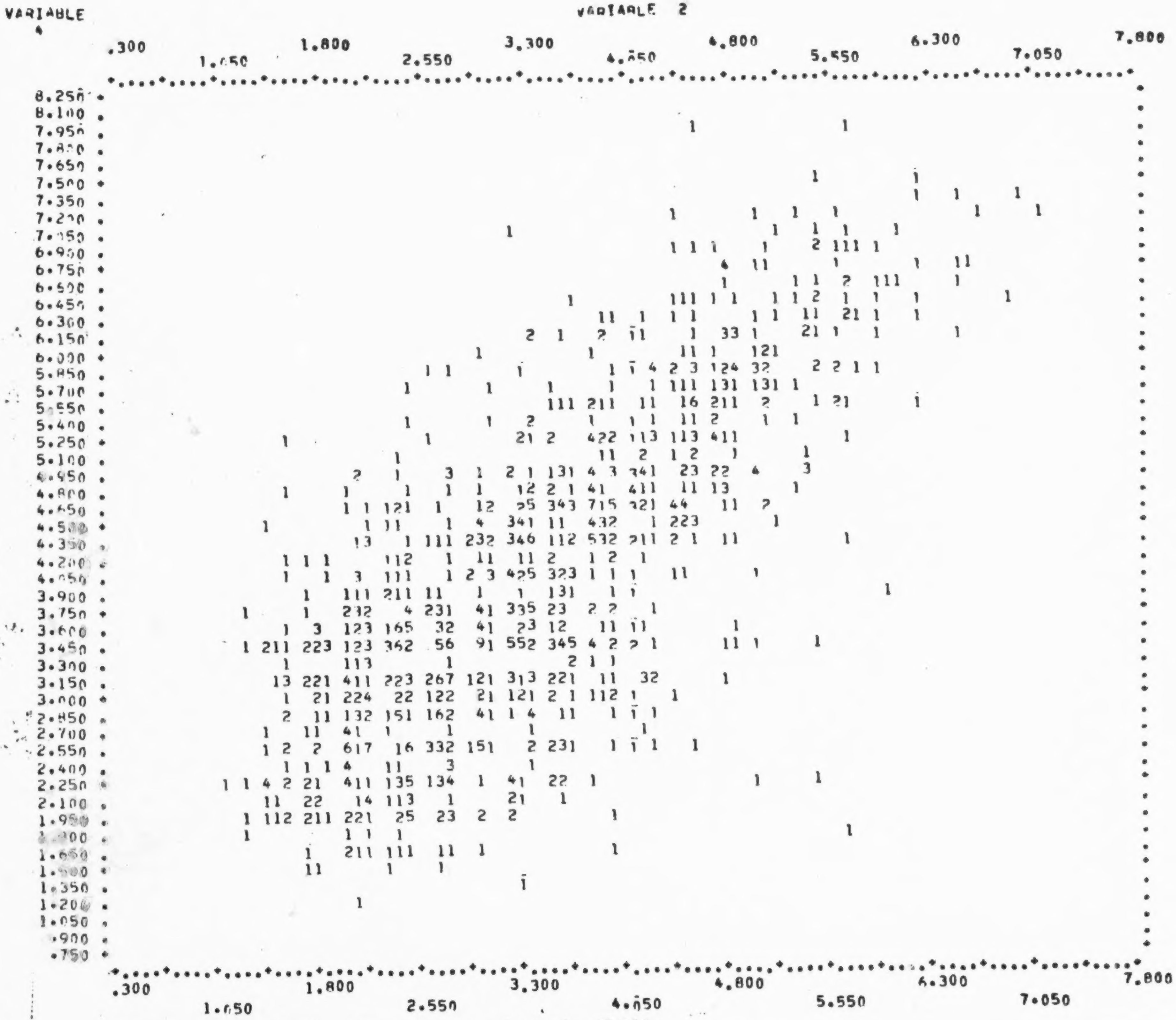


Figure 6. Grade 4 - Iowa Tests of Basic Skills.
Variable 2 is pretest; variable 4 is posttest.

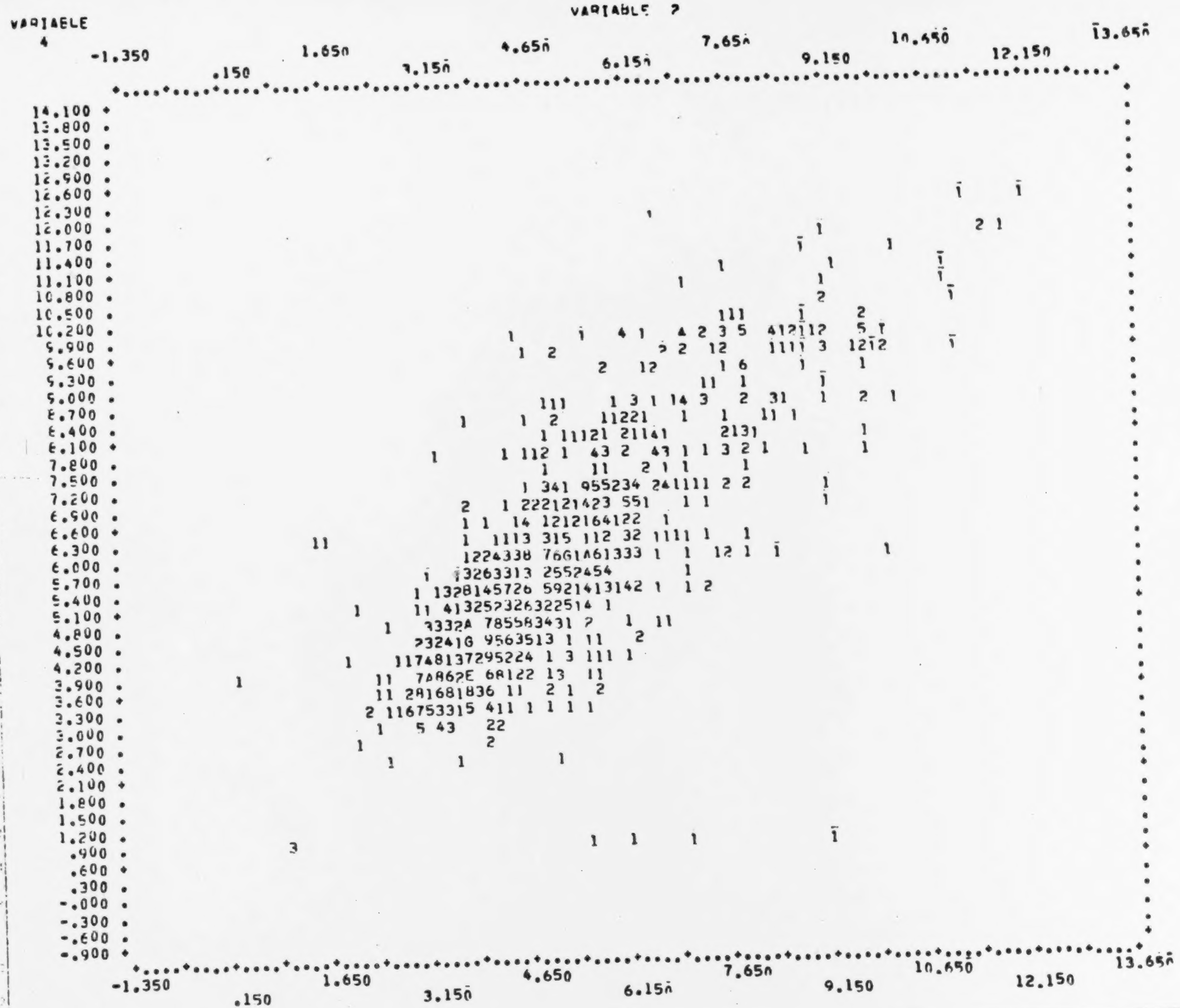


Figure 7. Grade 6 - Metropolitan Achievement Test.
Variable 2 is pretest; variable 4 is post test.

achievement gain analyses could have centered on an evaluation of the overall effectiveness of compensatory reading programs.

Data Analysis

Cumulative percentage distributions of simple discrepancy scores (reading achievement test score in grade-placement units minus grade placement)for pretests and posttests were constructed for each type of test. These distributions appear as Figures 5.1-5.6 in Chapter V and as Figures B.8-B.15 in this Appendix.

A general analysis of variance computer program was used in multivariate and univariate modes to ascertain differences in reading gain depending upon combined antecedent and transactional variables which might have been related to those gains. Several factors were analyzed as possible mediators of reading achievement gains. The factors were largely social, educational, and economic in nature, including ethnic background, economic deprivation, parental education, parental occupation, etc. Pupil's sex, age, and language spoken in the home were also investigated for relationship to reading gains. All of these factors were considered for nonparticipants, participants in one program, and participants in two or more programs. Gains in reading achievement were also inspected in relation to the number of hours of compensatory education participation.

Each of these factors was explored individually in relation to reading achievement gain; however, many of these factors are themselves related and the effect of any two or more of them is not necessarily additive. Thus the multivariate program was employed to delimit areas of interactions between various combinations of these factors.

Data on the correlates of reading achievement gain are presented in Chapter VI. They indicate the mean residual gain for pupils according to various classifications and the number of pupils in each classification for whom data were analyzed. Each cell mean indicates gains for pupils in one level of each factor considered in the analysis and each marginal mean is a grand mean for one factor across all levels of the other factor with which it is compared.

For the one-way analysis data, tables are presented showing a mean, sample size, and standard deviation for each level of the independent

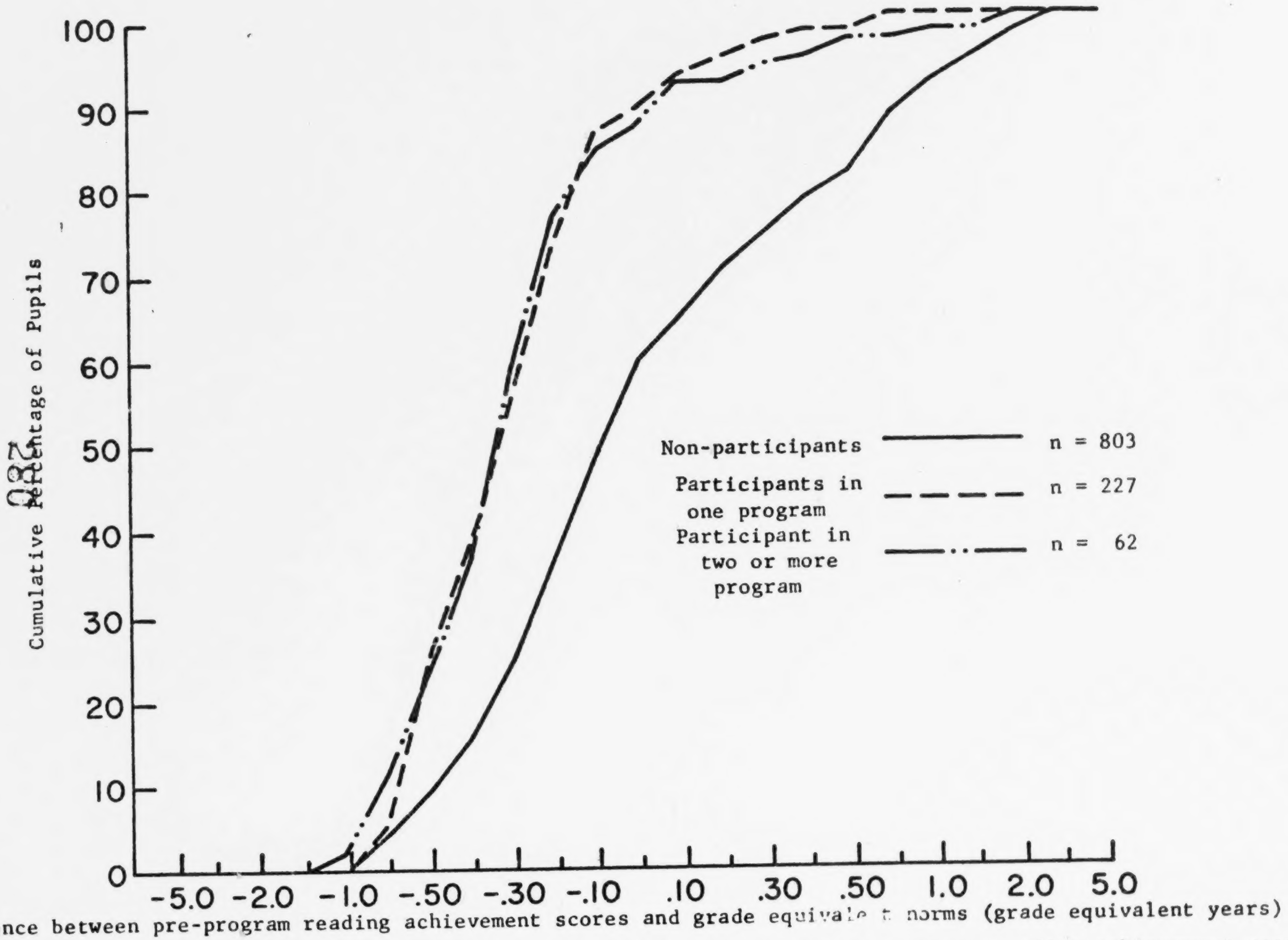


Figure B.8. Cumulative percentage distribution of differences between pre-program reading achievement scores and grade equivalent norms (grade equivalent years) for second grade pupils who completed the Stanford Achievement Tests

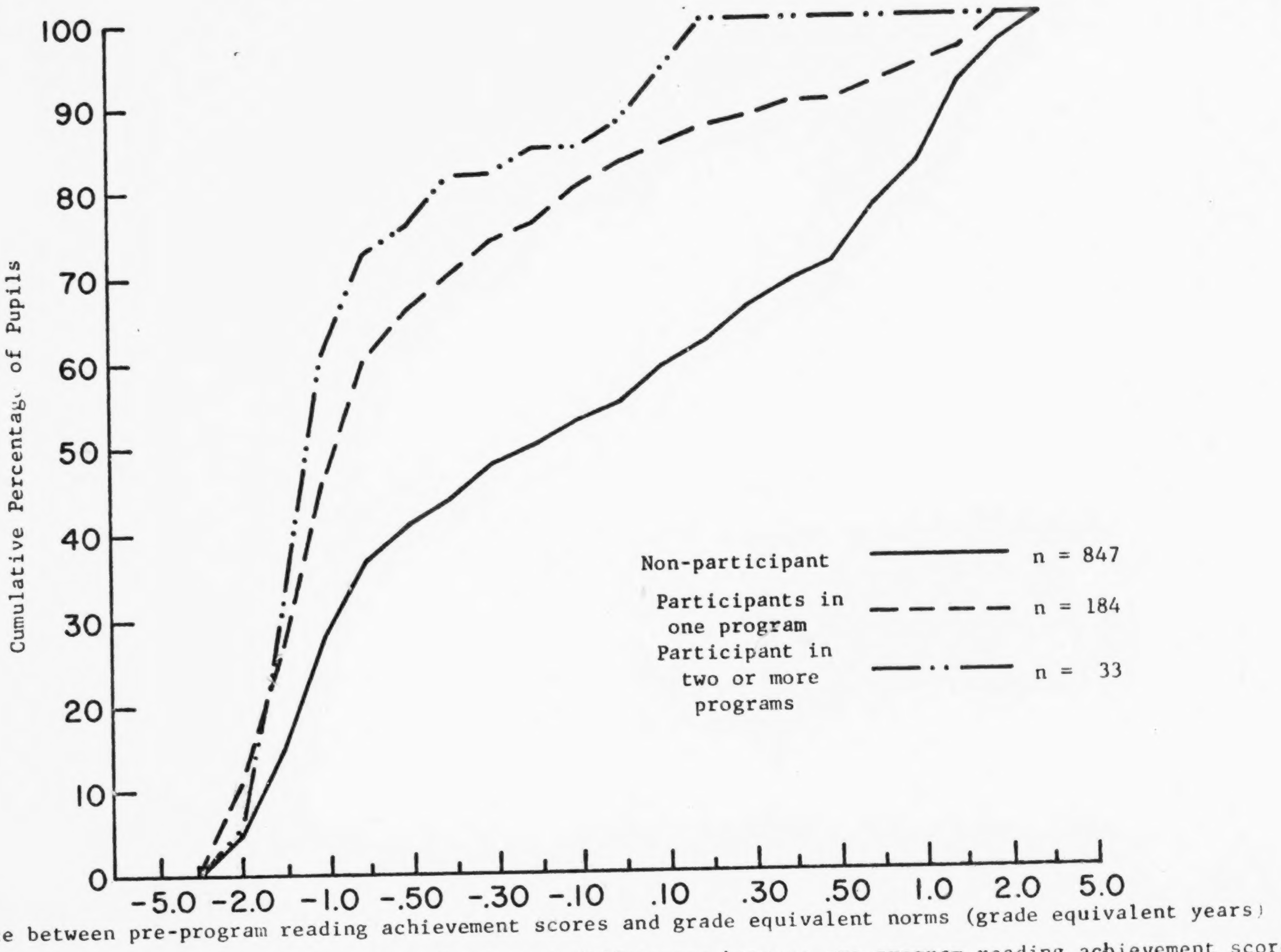
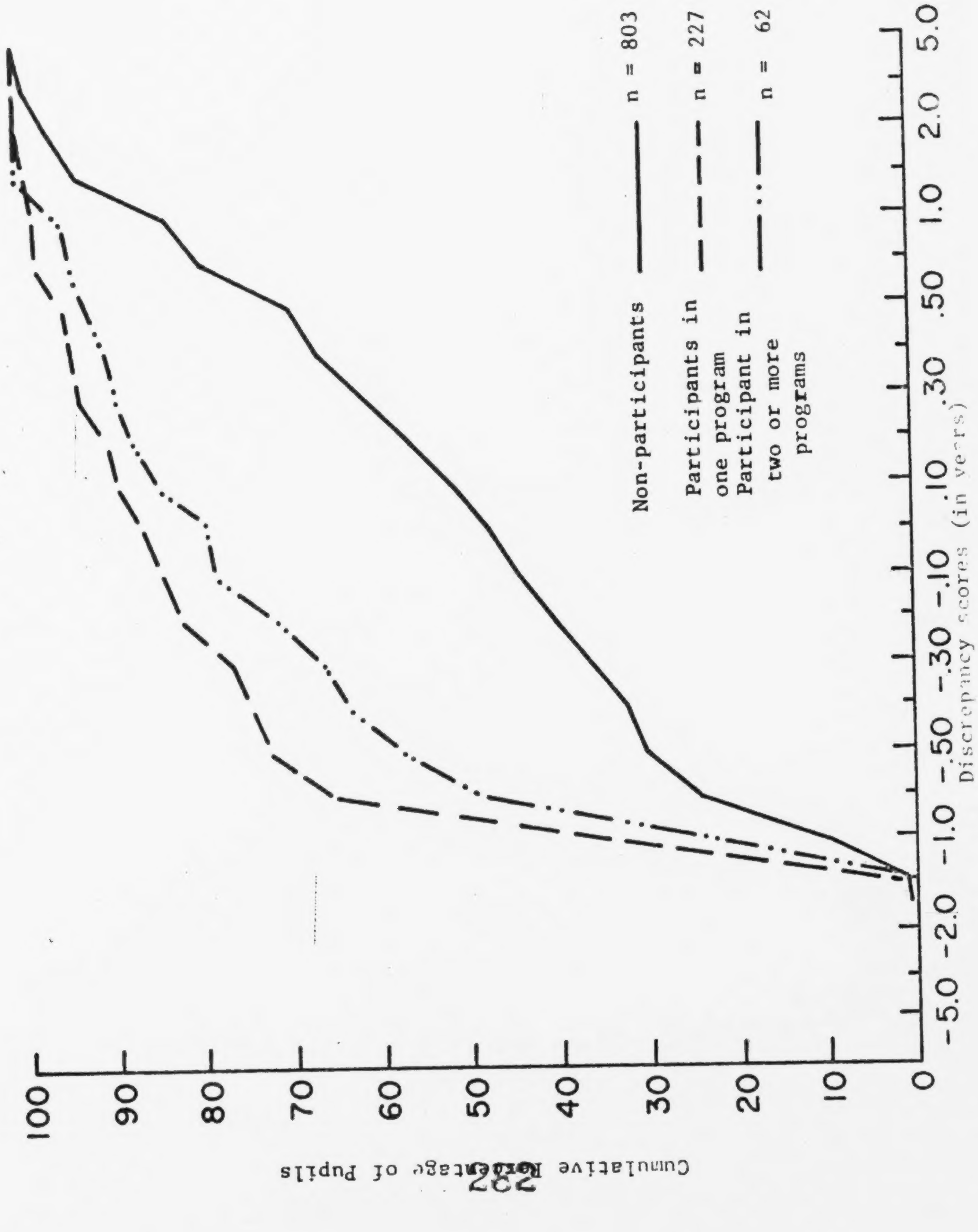


Figure B.9. Cumulative percentage distribution of differences between pre-program reading achievement scores and grade equivalent norms (grade equivalent years) for fourth grade pupils who completed the Iowa Tests of Basic Skills


Cumulative Percentage of Pupils
100
90
80
70
60
50
40
30
20
10
0
-5.0
-2.0
-1.0
-.50
-.30
-.10
.10
.30
.50
1.0
2.0
5.0
Discrepancy scores (in years)
Non-participants n = 803
Participants in one program n = 227
Participant in two or more programs n = 62

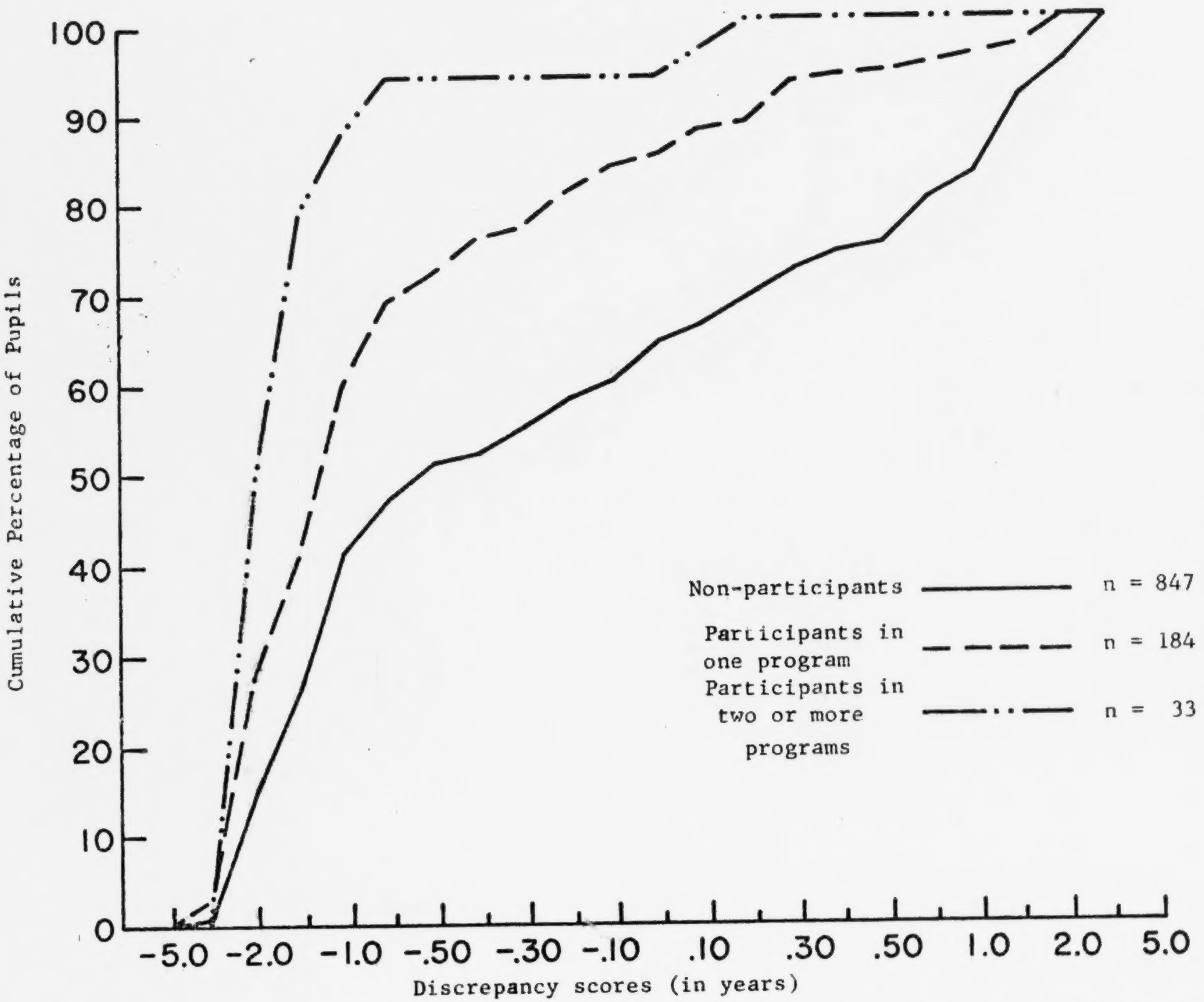


Figure B.11. Cumulative percentage distribution of differences between post-program reading achievement scores and grade equivalent norms (discrepancy scores) for fourth grade pupils who completed the Iowa Tests of Basic Skills

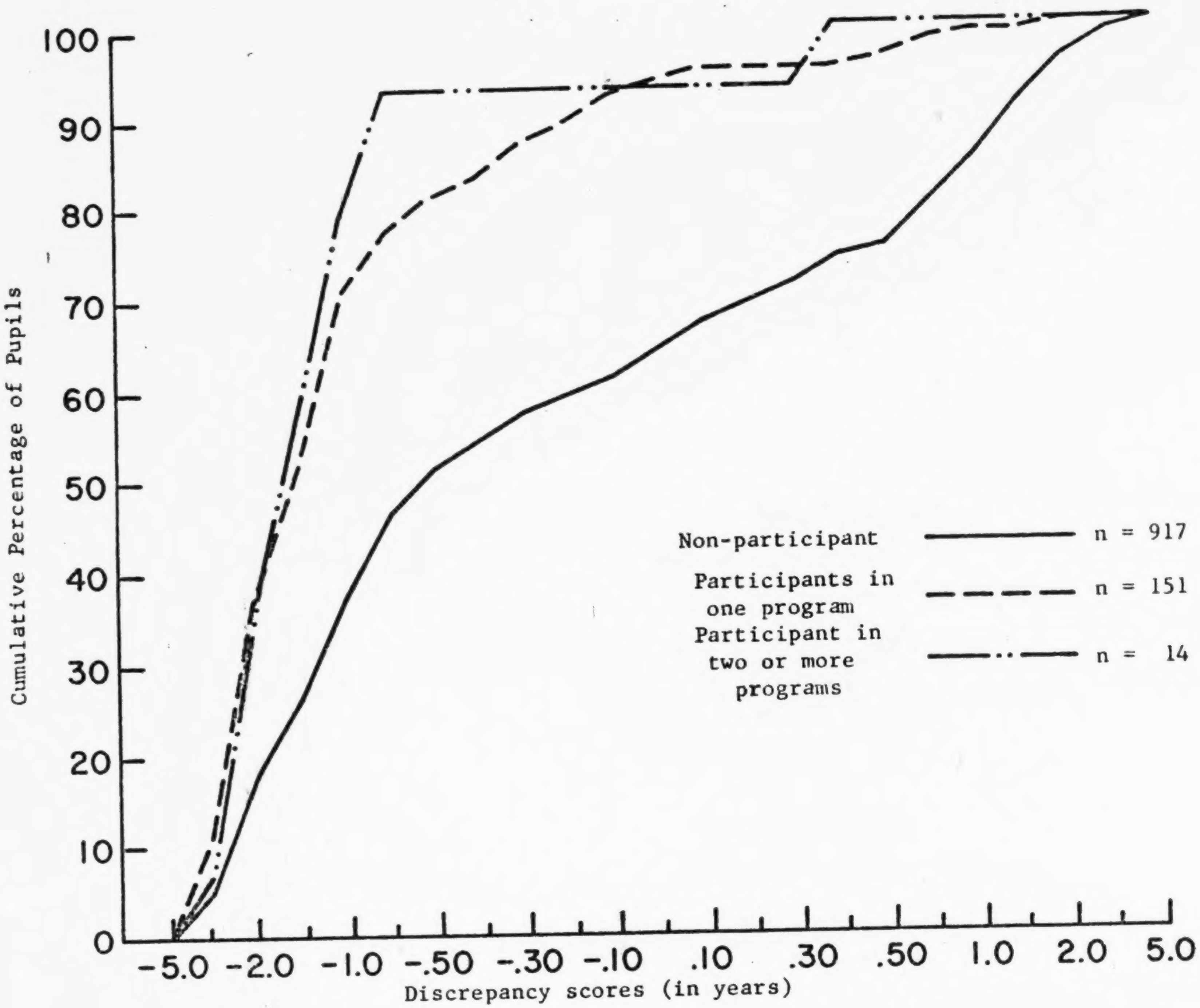


Figure B. 12. Cumulative percentage distribution of differences between pre-program reading achievement scores and grade equivalent norms (discrepancy scores) for sixth grade pupils who completed the Iowa Tests of Basic Skills

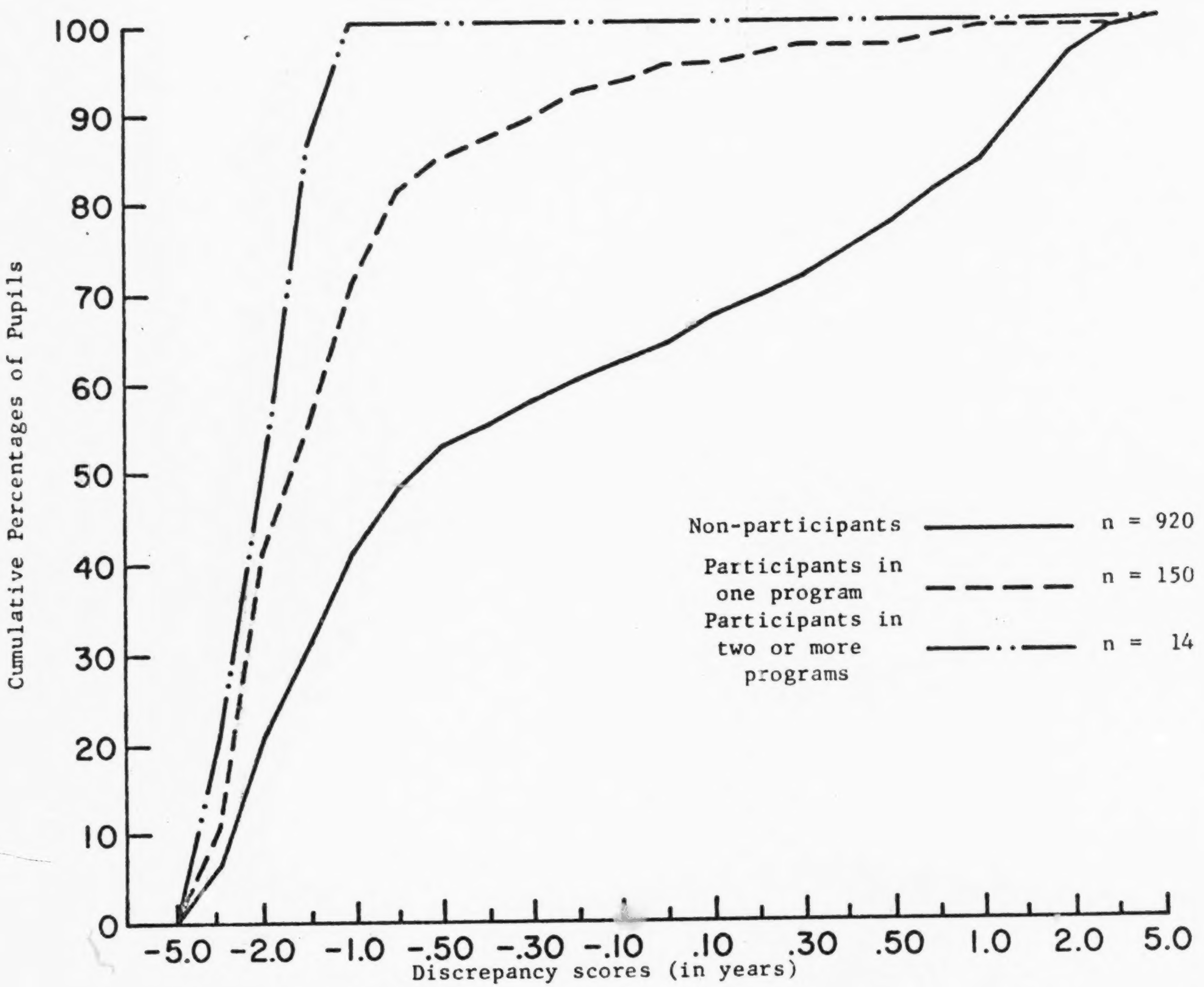


Figure B. 13. Cumulative percentage distribution of differences between post-program reading achievement scores and grade equivalent norms (discrepancy scores) for sixth grade pupils who completed the Iowa Tests of Basic Skills

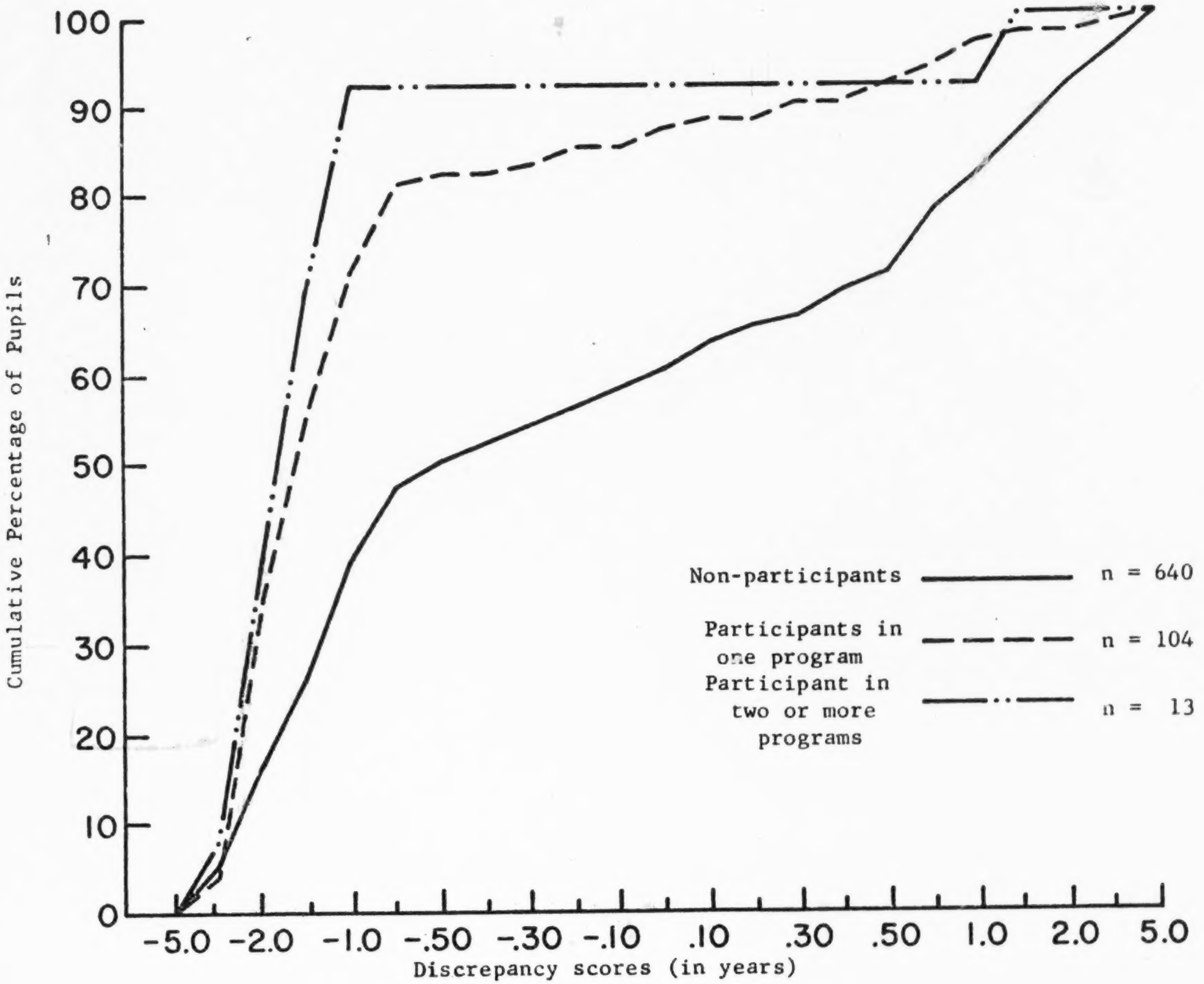


Figure B.14. Cumulative percentage distribution of differences between pre-program reading achievement scores and grade equivalent norms (discrepancy scores) for sixth grade pupils who completed the Stanford Achievement Tests

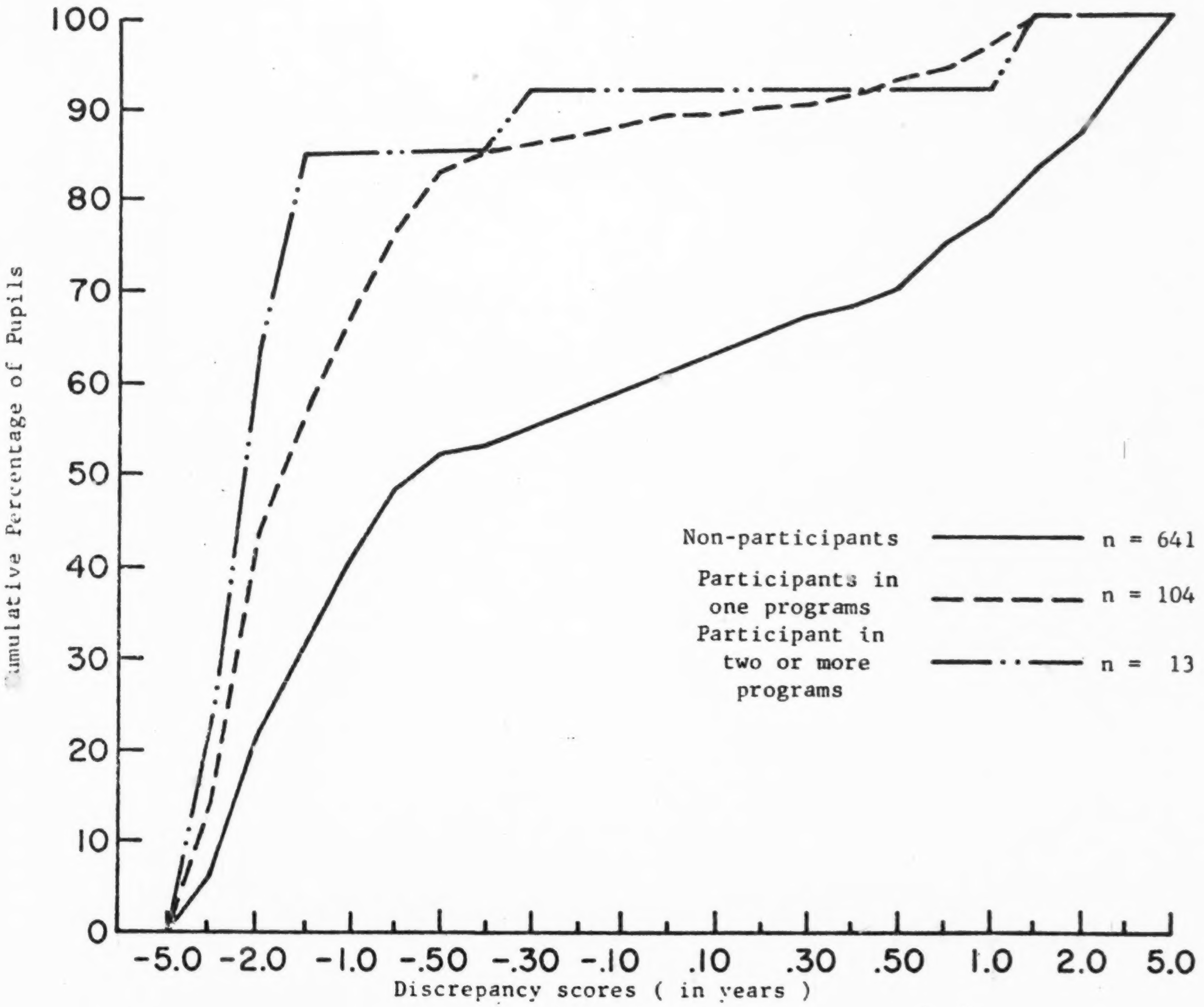


Figure B.15. Cumulative percentage distribution of differences between post-program reading achievement scores and grade equivalent norms (discrepancy scores) for sixth grade pupils who completed the Stanford Achievement Tests

variable, "hours of participation", as well as overall mean gain, standard deviation, and total sample size.

An alternative analysis of differences in gains in reading performance between participants and nonparticipants in compensatory reading programs could have employed the analysis of covariance. Covarying pretest and elapsed time out of posttest scores would achieve an equating of participants and nonparticipants on the two covariates. If the regression of posttest scores onto the two covariates is equivalent when calculated on the total group of subjects and on the groups of participants and nonparticipants separately, then analysis of covariance and the analysis of variance performed on the residual gain scores (defined in the preceding section) will yield results that can be transformed easily in one another and which lead to the same conclusions about program effectiveness. When the regression coefficients are equal when calculated on the total group of subjects and when calculated from pooled within-groups data, the estimated main-effects from the analysis of covariance are numerically equal to the average residual gain-scores for the various treatment groups. Analyses of covariance of the data for the seven gain-score files confirmed an essential equivalence of the two methods of analysis for the data in question. For example, for the Metropolitan Achievement Test at grade two, the regression coefficients for the total groups of subjects were 1.05952 and 0.05716 for pretest and elapsed time, respectively. The corresponding within-group coefficients from the analysis of covariance were 1.02671 and 0.04606. We have chosen tb report results in the form of average residual gain-scores, since such results can probably be comprehended by a wider audience than results in terms of means adjusted by analysis of covariance.

APPENDIX C

MULTIPLE REGRESSION ANALYSIS OF DATA FROM THE 1969 SURVEY OF COMPENSATORY EDUCATION

Stephen G. Jurs

MULTIPLE REGRESSION ANALYSIS OF DATA FROM THE 1969 SURVEY OF COMPENSATORY EDUCATION

Stephen G. Jurs

In the present research, the multiple regression and factor analysis structural regression were applied to data from the 1969 Compensatory Education Evaluation. Several methodological aspects of the technique were investigated to see whether the technique is sensitive to modifications in its application.

The Data

The data were collected as part of the 1968-69 Compensatory Education Evaluation, an evaluation of programs funded under Title I of the Elementary and Secondary Education Act of 1965. A mail survey of compensatory education programs was undertaken which consisted of questionnaires for pupils, teachers, schools, and districts receiving Title I funds.

The Sampling Plan

The population of schools sampled in the survey consisted of all elementary schools offering services supported by Title I funds from districts with enrollments over 300 pupils. A clearer picture of the population is given in Table 1 (Glass, 1970).

The sampling plan involved sampling at random every Title I district with enrollment above 40,000, approximately every fifth district with enrollment between 9,000 and 39,999, every fifteenth district with enrollment between 3,000 and 8,999, and every sixty-fifth district with enrollment between 300 and 2,999.

From the sampled districts 70 percent of the Title I elementary schools were randomly sampled. Once a school had been chosen, all teachers in grades 2, 4 and 6 were sampled and each teacher was instructed to draw a random sample of, on the average, five pupils in that teacher's class. The sampled districts, schools, teachers, and pupils are shown in Table 2 (Glass, 1970).

Of the sampled pupils, approximately 10 percent had posttest reading achievement scores reported. The majority of these scores were from the Metropolitan achievement test. Therefore, the research used all the pupils on whom Metropolitan reading pre- and posttest scores were available. This maximized the number of cases while eliminating problems caused by comparing across several achievement tests. The bias in selection thus comes from two sources: 1) only

TABLE 1

ESTIMATED NUMBERS OF DISTRICTS, SCHOOLS, TEACHERS AND PUPILS IN THE POPULATION OF 9,271 DISTRICTS TO WHICH DATA FROM THE 1969 SURVEY GENERALIZE

	District Size (Enrollment)				
	Above 40,000	9,000-40,000	3,000-8,999	300-2,000	Total
Title I Districts	92	658	1,917	6,569	9,236
Title I Elementary Schools	3,218	6,656	10,740	13,802	34,416
Teachers (Grades 1-6)	62,464	94,120	134,926	165,760	457,270
Teachers (Grades 2, 4 & 6)	31,232	47,060	67,463	82,880	228,635
Pupils (Grades 1-6)	1,767,904	2,562,038	3,634,932	4,295,506	12,260,380

TABLE 2

NUMBERS OF SAMPLED DISTRICTS, SCHOOLS, TEACHERS (GRADES 2, 4 AND 6) AND PUPILS (GRADES 2, 4 AND 6) CLASSIFIED BY DISTRICT SIZE

	District Size				
	Above 40,000	9,000-40,000	3,000-8,999	300-2,999	Total
Title I Districts	91	124	121	102	438
Title I Elementary Schools	1,454	876	438	152	2,920
Teachers (Grades 2, 4 & 6)	13,076	5,508	2,616	867	22,067
Pupils (Grades 2, 4 & 6)	61,652	25,968	12,336	4,080	104,036

respondents to the questionnaire are included, and 2) only those respondents who used the Metropolitan achievement test were included. If these two conditions occur nonrandomly, then the generalization to the original population will be attenuated. Data were available on 1037 second graders, 2729 fourth graders, and 2149 sixth graders. Within the fourth grade sample 1420 were Negro, 935 were White, and 363 were Spanish surnamed. Missing observations were replaced with group means to avoid creating non-singular data matrices.

The Instrument

The instrument from which the data were obtained was a four-page questionnaire. The pupil questionnaire was filled out by the teachers so responses were a combination of facts and teacher opinions about individuals.

The Variables

The items of the questionnaire were combined into variables according to a plan outlined by Henry Dyer (Dyer, 1969). The 68 items were thus transformed into 191 variables. The research included 40 of these variables with the Metropolitan reading score as the dependent variable. The variables have been divided into Lists A and B, roughly parallel halves, (see Table 3) so that analyses could be run on subsets of the variables. Additional information on the scoring of the variables is given in the **Addendum.**

TABLE 3

VARIABLES USED IN REGRESSION ANALYSES

Variable	Name	List
1	grade	
2	sex	A
3	age in months	B
4	months in class	A
5	absences per·month	A
6	number of schools attended	B
7	neglected child	B
8	delinquent	A
9	migrant	B
10	kindergarten attendance	A
11	pre-kindergarten attendance	B
12	American Indian	
13	Negro	
14	Oriental	
15	Spanish-surnamed	
16	home language other than English	B
17	occupational level—HOH	A
18	family on welfare	A
19	gross family income	A
20	income per family level—poverty level	B
21	education level—HOH	B
22	mother employed	B
23	urbanism of home	B
24	expectation, attitude	A
25	expectation, ability	B
26	parents' aspirations	A
27	T-P contact re progress	B
28	T-P contact re behavior	A
29	T-P contact re other	B
30	recent reading level	A
31	participation in regular reading program	A
32	participation in disadvantaged reading program	A
33	hours of participation in disadvantaged reading	B
34	number of previous years of remedial reading	A
35	number in pupil's household	A

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TABLE 3 (Continued)

VARIABLES USED IN REGRESSION ANALYSES

Variable	Name	List
36	outside reading (books)	B
37	parental academic support	A
38	parents' talk of going to college	B
39	reading posttest in grade equivalents	both
40	Reading pretest in grade equivalents	B
41	months between pre- and posttests	both

The Level of Interpretation

An assumption of regression analysis is that all variables are measured on the same unit of analysis (Blalock, 1964). The research was undertaken with the pupil as the level of the analysis. This assumed that pupils are randomly assigned to classrooms, which is a tenable assumption. Across the entire nation the methods of assigning pupils of grades 2, 4, and 6 to classrooms are so heterogeneous that as a whole randomness is approached.

With pupils as the level of analysis, only variables measured on individuals can be included. For example, the race of the student could be used, but the racial composition of the class could not be used. Such a variable as racial composition of the class is constant for members of that class.

Procedures

Least-squares solutions were computed with the Finn Multivariance computer program (Finn, 1965).

Factor analysis structural regression coefficients were computed using a series of computer programs. First, variables were intercorrelated using the BMD03D computer program (Dixon, 1965). Then, the intercorrelation matrix was factor analyzed using the BMD03M program (Dixon, 1965), a principal axis solution with squared multiple correlations as estimates of the communality. Finally, the factor loadings from BMD03M and the variances of the variables from the Finn program were combined in the formula $\hat{\beta} = d_1 f_1' (F_2' D_2^2 F_2)^{-1} F_2' D_2$ using the Symbolic Matrix Interpretive System (Tryon and Bailey, 1965).

RESULTS

Solutions were computed through the least-squares technique and the factor analysis structural regression technique. The least-squares solution was expected to indicate which variables were good predictors of reading as measured by the Metropolitan Achievement Test. It was thought that solutions might vary across grade levels or specific subsamples such as racial groups. The best predictors may not generalize to all groups investigated.

The FASR solutions were expected to measure a deeper, more generalizable dependency than the least-squares solutions. Hence, these solutions should be quite stable across subsamples. The regression coefficients were expected to indicate the real relationships among variables, unaffected by the measurement error or variance inherent to specific subsamples of the population.

Both least-squares and factor analysis structural regression techniques would indicate important variables to be studied in future Compensatory Education Evaluations. Any change in the predictive worth of independent variables over the years could lead to important evaluative conclusions. The solutions would point out how much of an impact Title I programs were having. High predictive value for variables associated with Title I programs would indicate that these programs were having a real effect. High predictive value for variables associated with the home and community and low predictive value for Title I variables would indicate little impact for the Title I programs. Hence, the analyses answer both methodological and substantive questions.

In the results section are the solutions for the least-squares and factor analysis structural regression techniques. The latter include solutions based on overfactorings (roots $\geqq 0$) and underfactorings (roots $\geqq 1$). The correlation matrices, factor patterns, and means and variance of the variables on which these solutions are based are given in the **Addendum.**

Interpretation of the Least-Squares Solutions

For grades 2, 4, and 6, most of the least-squares regression coefficients are near zero. Tables **4** and **5** indicate that good predictors of posttest reading scores are "recent reading level" and "pretest reading scores." "Delinquent child" and "Spanish surnamed" also seem to be fair predictors for the three grades sampled. Multiple R's range from .61 to .72, indicating that important explanatory variables may not have been included in the analysis.

TABLE 4

GRADE FOUR LEAST-SQUARES AND FACTOR ANALYSIS STRUCTURAL REGRESSION COEFFICIENTS

	L-S	Underfactor FASR	Proper Number FASR	Overfactor FASR
1. Sex	01053	00040	02171	03727
2. Age	-00078	-03004	01618	00058
3. Months in class	01638	-00411	08904	03162
4. Absences/month	-08897	00075	-00874	01227
5. Number of schools	01268	00039	-06479	09178
6. Neglected child	-17991	-00003	00374	00623
7. Delinquent child	43931	-00001	00129	00360
8. Migrant child	-12353	-00001	00096	00990
9. Kindergarten	00476	-00025	-00179	10314
10. Pre-Kindergarten	07384	00035	-01021	03873
11. Indian	-01288	00000	00000	-00194
12. Negro	-19212	-00265	-12392	-19444
13. Oriental	21117	00000	-00029	00683
14. Spanish surnamed	-11028	00210	-07168	-08278
15. Home non-English	12051	-00222	-07357	-02879
16. Occupation-HOH	01743	-00078	05167	-06172
17. Welfare	02263	00056	02380	04337
18. Gross income	00001	00000	00000	00000
19. Poverty level	00005	00001	00000	00000
20. Education-HOH	00815	00078	23420	01984

TABLE 4 (Continued)

GRADE FOUR LEAST-SQUARES AND FACTOR ANALYSIS STRUCTURAL REGRESSION COEFFICIENTS

	L-S	Underfactor FASR	Proper Number FASR	Overfactor FASR
21. Mother employed	-00167	-00262	-15881	-09609
22. Urbanism of home	-05640	00083	02106	-08205
23. Expect/attitude	01274	00605	20519	-06668
24. Expect/ability	03598	00694	27034	06951
25. Parent aspiration	-02044	-00155	-17021	00763
26. P-T contact (progress)	02187	-00110	-06919	-24785
27. P-T contact (behavior)	-06363	-00101	-08501	-00843
28. P-T contact (other)	04489	-00006	-00705	14297
29. Recent reading level	35202	00170	25828	31181
30. Regular reading	-08371	-00013	-01319	-03827
31. Disadvantaged reading	03756	-00012	-01255	05900
32. Hours disadvantaged reading	-00051	-00016	00009	00000
33. Years remedial reading	-00486	03750	-12376	-00701
34. Number in household	-00564	-00320	08344	-09018
35. Outside reading	07425	00016	00909	15552
36. Parent support	-00694	-00236	-03907	12857
37. Parent Coll. talk	-02647	00110	-02178	01385
38. Reading pretest	64127	00146	66400	1.17161
39. Months since test	01391	00236	18047	00842
Mult R	.7191			
$F_{39,2689}$	73.82			

TABLE 5

LEAST-SQUARES AND FACTOR ANALYSIS STRUCTURAL REGRESSION COEFFICIENTS FOR GRADES TWO AND SIX

	Grade 2		Grade 6	
	L-S	FASR	L-S	FASR
1. Sex	05708	-01737	-04412	-00642
2. Age in months	00072	00625	-00184	-00695
3. Months in class	-00901	00211	02369	-18896
4. Absences/month	-04978	-02169	11209	04765
5. Number schools	-02480	12170	03356	16655
6. Neglected child	-11132	01189	39273	00503
7. Delinquent child	52723	00217	-28023	00181
8. Migrant child	-12410	00884	31765	00106
9. Kindergarten	04835	-03432	03827	-00706
10. Pre-Kindergarten	-04788	01707	-04726	00027
11. Indian	05740	00015	-1.17715	00000
12. Negro	-00758	21290	-14022	-00904
13. Oriental	-37994	-00013	-34873	00002
14. Spanish surnamed	03004	-23078	-22556	-01560
15. Home non-English	08717	23174	14979	02058
16. Occupation-HOH	03067	-05434	00888	-09353
17. Welfare	01891	02523	-08664	02296
18. Gross income	00003	00000	00001	00000
19. Poverty level	-00002	00000	00003	00000
20. Education-HOH	-00962	-33647	01154	05673
21. Mother employed	00145	09118	-02139	-11107

TABLE 5 (Continued)

LEAST-SQUARES AND FACTOR ANALYSIS STRUCTURAL REGRESSION COEFFICIENTS
FOR GRADES TWO AND SIX

	Grade 2		Grade 6	
	L-S	FASR	L-S	FASR
22. Urbanism of home	-18037	04648	-07898	00699
23. Expect/attitude	-00701	02176	05130	-12006
24. Expect/ability	09956	18634	01882	-04360
25. Parent aspiration	-01258	-01238	-01655	04305
26. P-T contact (progress)	-02527	-06025	00531	-01030
27. P-T contact (behavior)	00394	-03600	-01705	01648
28. P-T contact (other)	04693	-03838	04573	00328
29. Recent reading level	38640	39830	48521	13267
30. Regular reading	-09158	-00353	-08121	-00908
31. Disadvantaged reading	-08327	-01339	-11460	-00123
32. Hours disadvantaged reading	-00006	-00004	00121	00002
33. Years remedial reading	00080	-00123	-00708	-04672
34. Number in household	-01887	02117	-01240	04444
35. Outside reading	05633	00154	18629	-00708
36. Parent support	00010	-10159	-00603	-04796
37. Parent Coll. talk	00100	-11686	00172	15305
38. Reading pretest	48386	30552	56252	1.00930
39. Months since test	-00878	-16668	-01443	-08598
Mult R	.6110	Mult R	.6651	
$F_{39,997}$	15.2253	$F_{39,2109}$	42.89	

Variables related to the Title I programs such as "hours of disadvantaged reading" have zero order regression coefficients indicating no evidence of the treatment having predictive value.

For the separate racial groups, Multiple R's range from .59 to .89. (See Table 6.) Hence, these variables have different predictive value for different racial groups. Strong predictive variables include "pretest reading score," "migrant child," and "neglected child." Again, variables related to Title I programs do not have high predictive value.

Good predictors of "posttest reading scores" are previous measures of reading levels and personological variables such as delinquent, neglected, or migrant child. The lack of predictive value for variables related to Title I or other reading programs indicates that these programs have been ineffective in changing the reading levels of the participants in these programs.

Solutions Based on Overfactoring and Underfactoring

Tables 5, 6, 8, 9, 11, 12, 14, and 15 all include solutions based on overfactoring (roots $\geqq 0$) or underfactoring (roots $\geqq 1$). The results clearly indicate the need for extracting a large number of factors when calculating factor analysis structural regression coefficients. Underfactoring does not take into account enough of the variance in the system. Hence, coefficients based on underfactoring tend to zero. The realization of this result is the reason for the

TABLE 6

LEAST-SQUARES REGRESSION COEFFICIENTS FOR SEPARATE RACIAL GROUPS

	White	Negro	Spanish Surnamed
1. Sex	10494	05749	10686
2. Age in months	-00455	00282	-00596
3. Months in class	12472	-01437	09049
4. Absences/month	-25114	-10483	03985
5. Number schools	08323	01966	-00428
6. Neglected child	24418	-39823	1.02999
7. Delinquent child	-14529	50842	-19273
8. Migrant child	98256	-40686	-23.89222
9. Kindergarten	00113	-07564	-35554
10. Pre-Kindergarten	-05765	13867	-48375
11. Home non-English	17349	-07321	-15837
12. Occupation-HOH	-00255	09315	01426
13. Welfare	-15272	18535	-47018
14. Gross income	00004	00007	-00002
15. Poverty level	00017	-00023	00037
16. Education-HOH	03367	-02978	-04541
17. Mother employed	04176	-03118	04726
18. Urbanism of home	12595	16286	24967
19. Expect/attitude	-02225	-03976	-03253
20. Expect/ability	12482	03789	08252
21. Parent aspiration	04693	-09829	02313
22. P-T contact (progress)	17617	21360	13754
23. P-T contact (behavior)	-13280	-14378	-10711

TABLE 6 (Continued)

LEAST-SQUARES REGRESSION COEFFICIENTS FOR SEPARATE RACIAL GROUPS

	White	Negro	Spanish Surnamed
24. P-T contact (other)	02586	-06542	12257
25. Recent reading level	27469	48038	25624
26. Regular reading	00526	00988	22370
27. Disadvantaged reading	06289	06072	14134
28. Hours disadvantaged reading	-00065	-00003	-00001
29. Years remedial reading	00678	00464	03460
30. Number in household	03865	-03042	08002
31. Outside reading	09926	-15394	-23093
32. Parent support	-11278	-12058	-06476
33. Parent Coll. talk	-13894	04259	-12654
34. Reading pretest	74459	65989	90256
35. Months since test	09755	02941	06816
	Mult R .5900	Mult R .6709	Mult R .8909
	$F_{35,898}$ 36.93	$F_{35,1384}$ 32.36	$F_{35,327}$ 35.96

TABLE 7

FACTOR ANALYSIS STRUCTURAL REGRESSION COEFFICIENTS FOR SEPARATE RACIAL GROUPS

	Underfactoring		
	White	Negro	Spanish Surnamed
1. Sex	00001	00028	00962
2. Age in months	-00726	-09376	13075
3. Months in class	00003	-00079	-00832
4. Absences/month	-00001	00013	00348
5. Number schools	-00004	00022	-01667
6. Neglected child	00000	-00001	-00018
7. Delinquent child	00000	00000	00000
8. Migrant child	00000	00000	00000
9. Kindergarten	00000	-00018	00029
10. Pre-Kindergarten	00000	00000	00031
11. Home non-English	00000	00000	00079
12. Occupation-HOH	00000	-00011	-12045
13. Welfare	00000	00011	00330
14. Gross income	00000	00000	00000
15. Poverty level	-00001	00004	00000
16. Education-HOH	-00010	00017	18094
17. Mother employed	00001	-00038	-01440
18. Urbanism of home	-00001	00016	-00634
19. Expect/attitude	00014	00435	28082
20. Expect/ability	00014	00443	29028
21. Parent aspiration	-00002	-00380	-06227

TABLE 7 (Continued)

FACTOR ANALYSIS STRUCTURAL REGRESSION COEFFICIENTS FOR SEPARATE RACIAL GROUPS

	Underfactoring		
	White	Negro	Spanish Surnamed
22. P-T contact (progress)	00000	00030	-08387
23. P-T contact (behavior)	-00001	-00020	-07439
24. P-T contact (other)	00000	00011	-00568
25. Recent reading level	00004	00144	13569
26. Regular reading	00000	00001	-00497
27. Disadvantaged reading	00000	-00010	-01306
28. Hours disadvantaged reading	00060	00004	00009
29. Years remedial reading	-00046	00202	-34512
30. Number in household	-00010	-00110	13946
31. Outside reading	00001	00016	01202
32. Parent support	00005	00058	04752
33. Parent Coll. talk	-00002	-00041	00158
34. Reading pretest	00004	00551	77258
35. Months since test	-00016	00349	35904

TABLE 8

FACTOR ANALYSIS STRUCTURAL REGRESSION COEFFICIENTS FOR SEPARATE RACIAL GROUPS

	Overfactoring		
	White	Negro	Spanish Surnamed
1. Sex	-30993	-14168	-39562
2. Age in months	-00389	-00048	00011
3. Months in class	68431	25457	71971
4. Absences/month	-31917	-00487	08621
5. Number schools	1.33667	38830	40074
6. Neglected child	01505	03493	-02178
7. Delinquent child	01007	00009	00000
8. Migrant child	01881	00875	00000
9. Kindergarten	27402	09429	1.24795
10. Pre-Kindergarten	10033	31956	94226
11. Home non-English	00301	03095	03186
12. Occupation-HOH	-14872	67523	1.02840
13. Welfare	-00313	11645	28209
14. Gross income	00000	00000	00000
15. Poverty level	00000	00000	00000
16. Education-HOH	-15492	03428	-16911
17. Mother employed	-37426	-46830	73187
18. Urbanism of home	-25291	20075	52708
19. Expect/attitude	37138	-33996	97197
20. Expect/ability	-13580	-12358	-54849
21. Parent aspiration	36932	-67370	-64494

TABLE 8 (Continued)

FACTOR ANALYSIS STRUCTURAL REGRESSION COEFFICIENTS FOR SEPARATE RACIAL GROUPS

	Overfactoring		
	White	Negro	Spanish Surnamed
22. P-T contact (progress)	37812	-27493	-1.01966
23. P-T contact (behavior)	40618	-04927	-53212
24. P-T contact (other)	-37716	-78564	1.00200
25. Recent reading level	15213	86651	-71510
26. Regular reading	10514	-09295	-36279
27. Disadvantaged reading	19691	-09470	06444
28. Hours disadvantaged reading	00000	00003	00016
29. Years remedial reading	03519	02577	08459
30. Number in household	-11333	-05378	-06738
31. Outside reading	09883	-25080	25054
32. Parent support	08433	-1.09218	-89497
33. Parent college talk	-43492	-16463	45331
34. Reading pretest	1.46872	1.48431	1.13744
35. Months since test	06022	-05105	15585

following discussion of results being based solely on the least-squares and overfactored factor analysis structural regression solutions.

Underfactored solutions do not include enough of the variance. For example, for Whites for the total number of variables, overfactoring brought the percent of variance accounted for up from .25 to .38. For Negroes it rose from .23 to .35. For Spanish surnamed pupils, the percent of variance accounted for increased from .27 to .40 when overfactoring was used. Such differences greatly affected the factor analysis structural regression solutions.

These results suggest that factor analysis solutions which account for substantial portions of the variance would yield factor analysis structural regression coefficients that would have larger absolute values than solutions for data for which the factor analysis solutions do not account for much of the variance. However, this is not confirmed by the data. Table 4 shows solutions for underfactoring, the proper number of factors as determined by a Scree test, and for overfactoring. The coefficients do not increase as a function of the number of factors. They vacillate quite unpredictably. The regression coefficients are not linear functions of the number of factors extracted.

Stability of Solutions Across Grades 2, 4, and 6

Factor analysis structural regression coefficients were hypothesized to be more stable than least-squares solutions across grade levels. The results in Tables 4 and 5 do not seem to support this idea very strongly. Least-squares and factor analysis structural regression solutions both have very small regression coefficients in most cases. In grade two, 19 of the 39 pairs of regression coefficients differ in sign. Only "recent reading level" and "pretest" have sizable regression coefficients in both solutions. In grade four, 15 of the 39 pairs differ in sign. In grade six, 16 of the 39 pairs differ in sign. Again in both grades four and six "recent reading level" and "pretest" have substantial loadings in both solutions.

The stability of the solutions across grade levels are shown in Figures 1 through 6. These figures are scatterplots of the regression coefficients across grade levels. Stable solutions would have a narrow band of points with a positive slope of approximately 45°.

None of the six figures display such a scatterplot. There is no evidence of stability for either the least-squares or the factor analysis structural regression coefficients.

Stability of Solutions Across Racial Groups

The pattern of regression coefficients for the separate racial groups of the grade four sample are given in Tables 6, 7, and 8. The many zero order coefficients make the solutions difficult to interpret.

Figure 1

Scatterplot of Least-Squares Coefficients

for Grades Two and Four

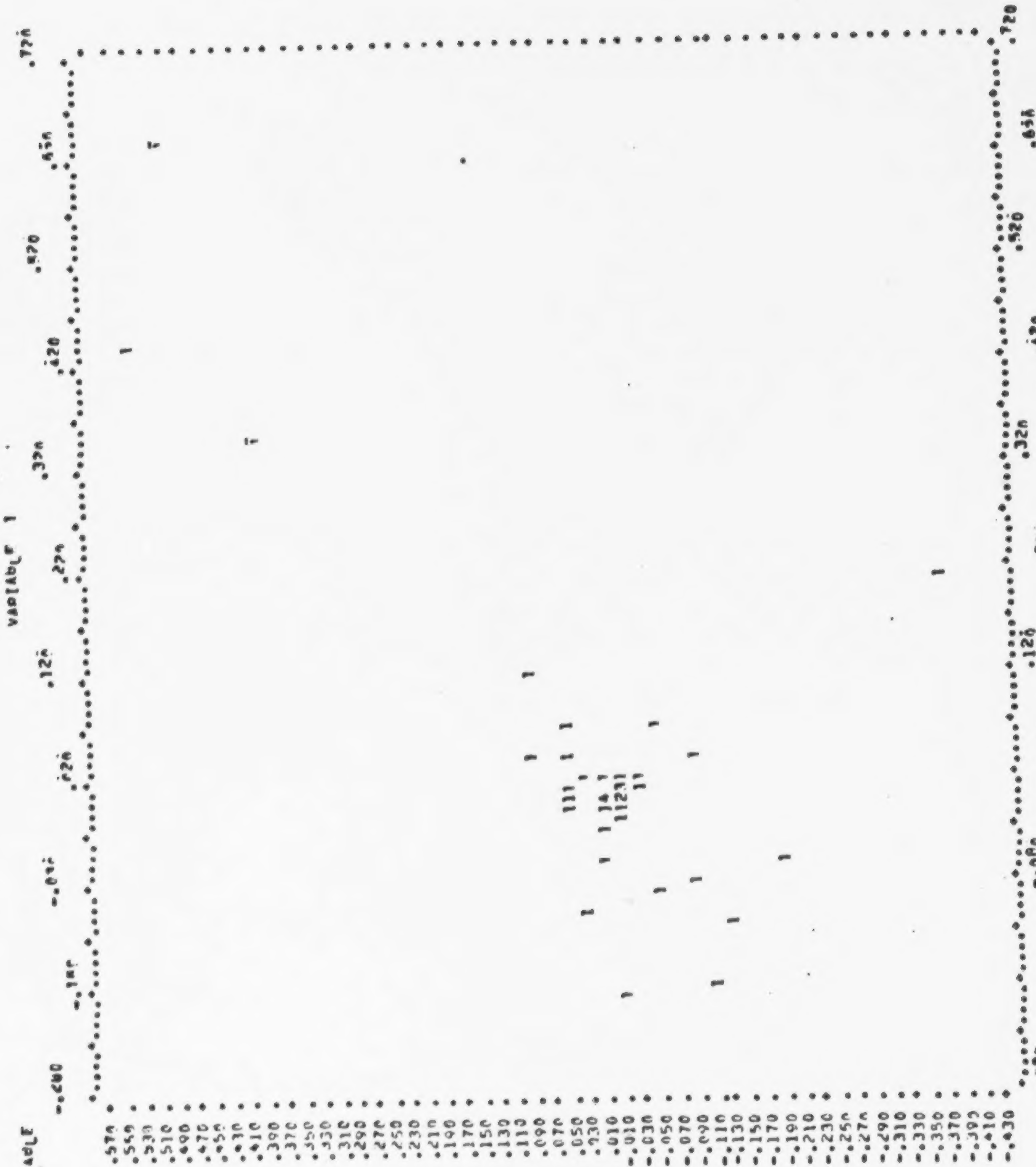

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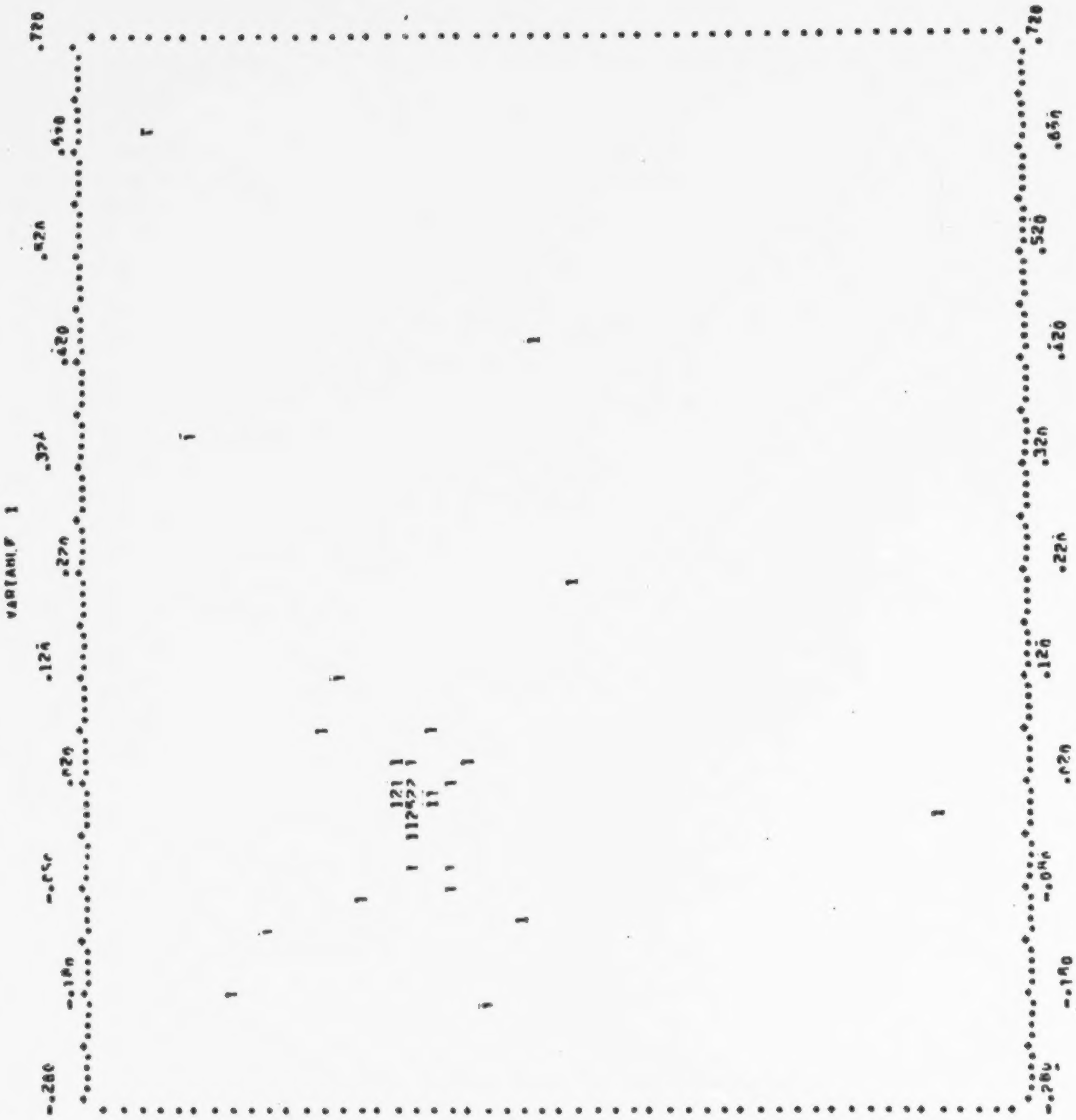
Figure 2

Scatterplot of Least-Squares Coefficients

for Grades Four and Six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.720
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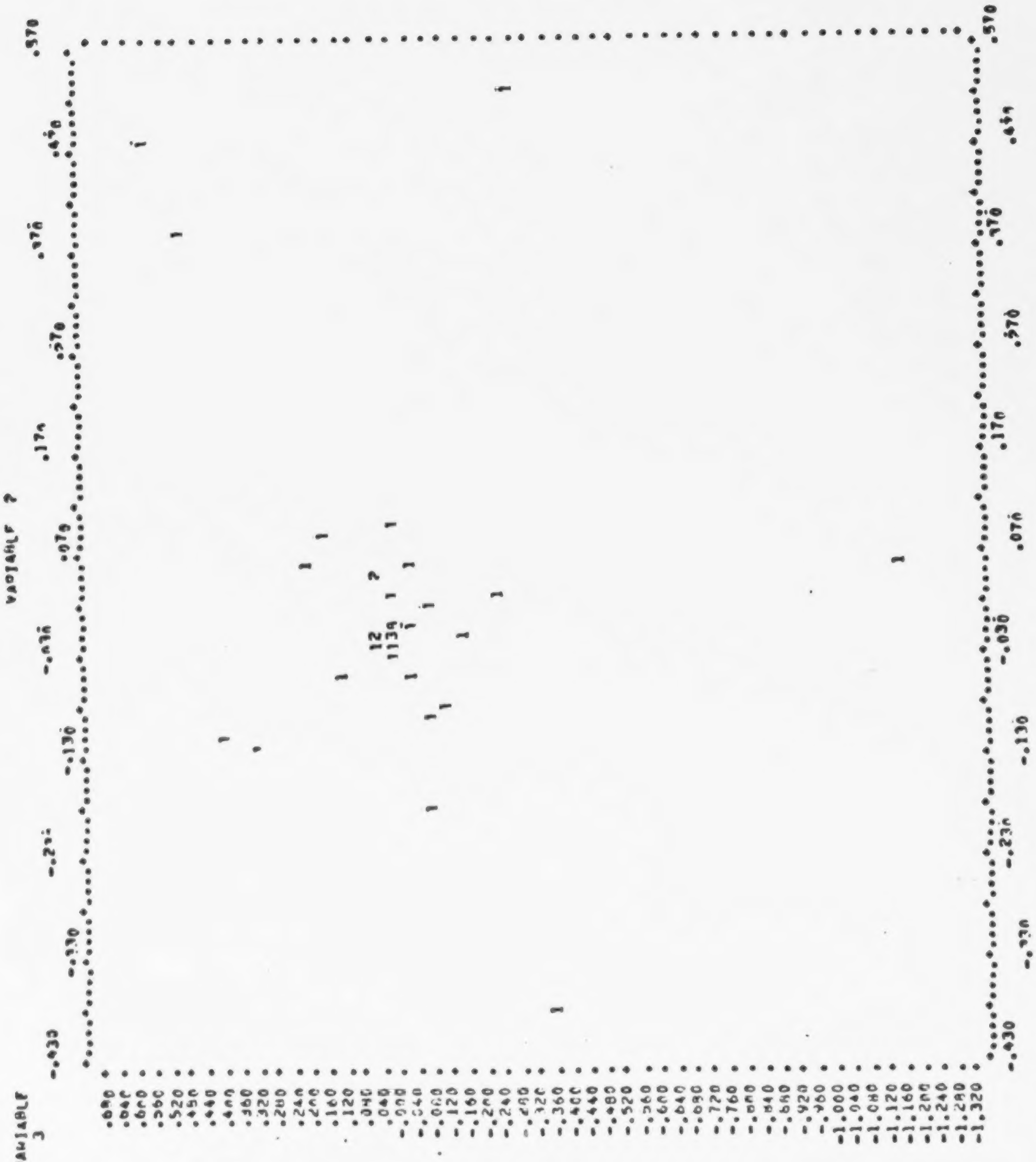
.400
.360
.320
.280
.240
.200
.160
.120
.080
.040
.000
-.040
-.080
-.120
-.160
-.200
-.240
-.280
-.320
-.360
-.400
-.440
-.480
-.520
-.560
-.600
-.640
-.680
-.720
-.760
-.800
-.840
-.880
-.920
-.960
-1.000
-1.040
-1.080
-1.120
-1.160
-1.200
-1.240
-1.280
-1.320

316

Figure 3

Scatterplot of Least-Squares Coefficients

for Grades Two and Six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-.040
-.080
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-.160
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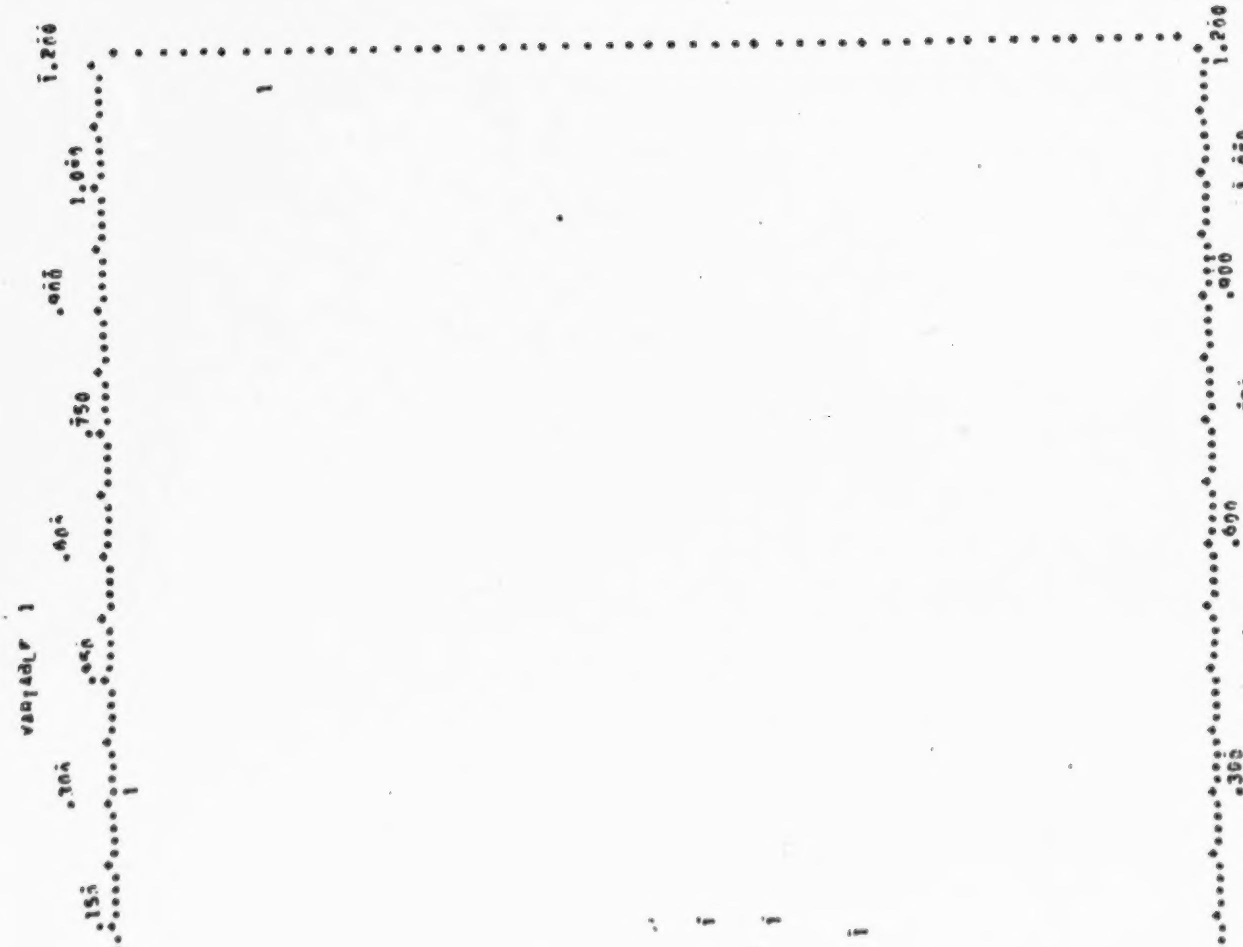
-.800
-.840
-.880
-.920
-.960
-1.000
-1.040
-1.080
-1.120
-1.160
-1.200
-1.240
-1.280
-1.320

Figure 4

Scatterplot of Factor Analysis Structural Regression Coefficients for Grades Two and Four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.600
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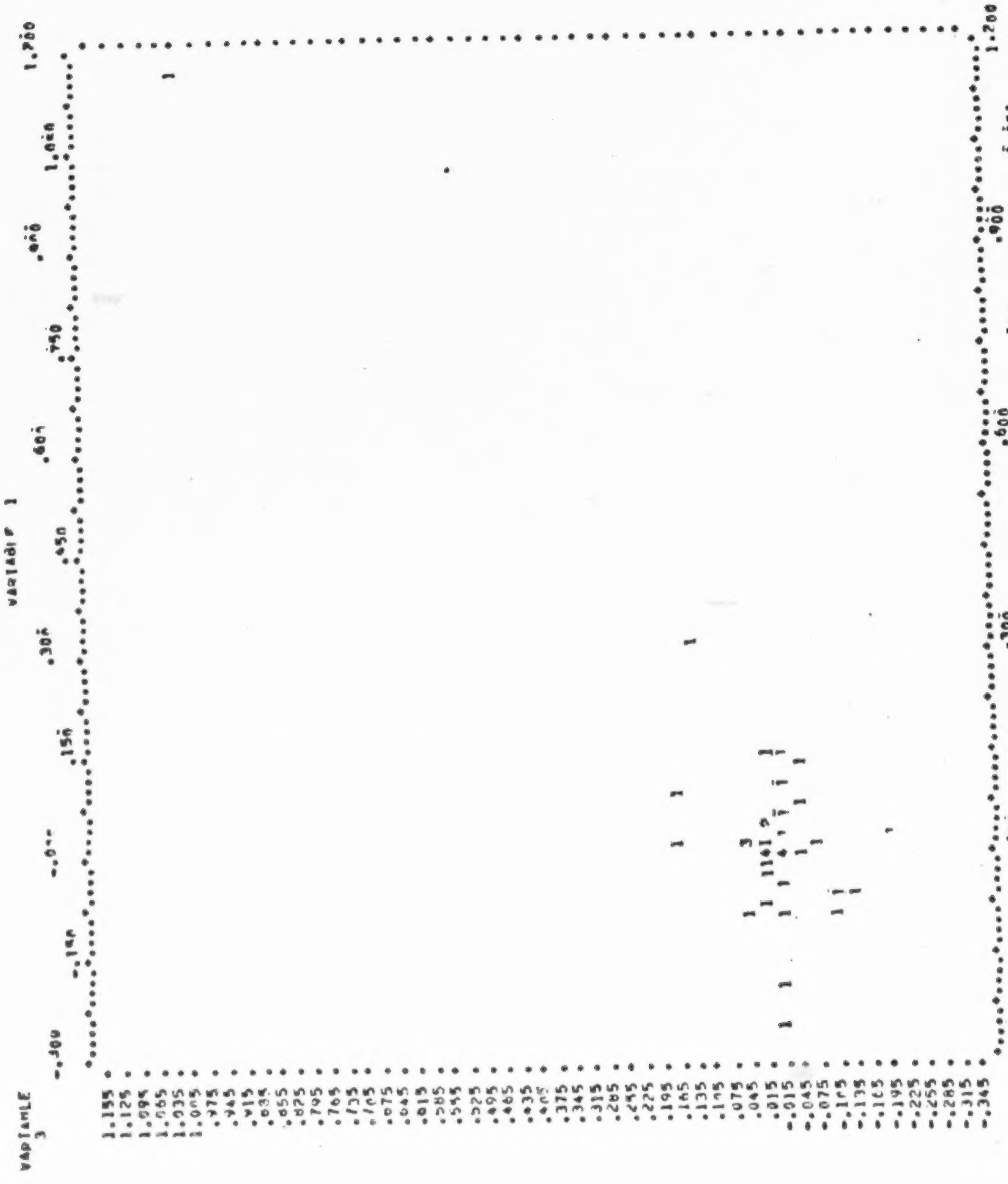
1.050
1.200

Figure 5

Scatterplot of Factor Analysis Structural Regression Coefficients

for Grades Four and Six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1.065
1.035
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.915
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.855
.825
.795
.765
.735
.705
.675
.645
.615
.585
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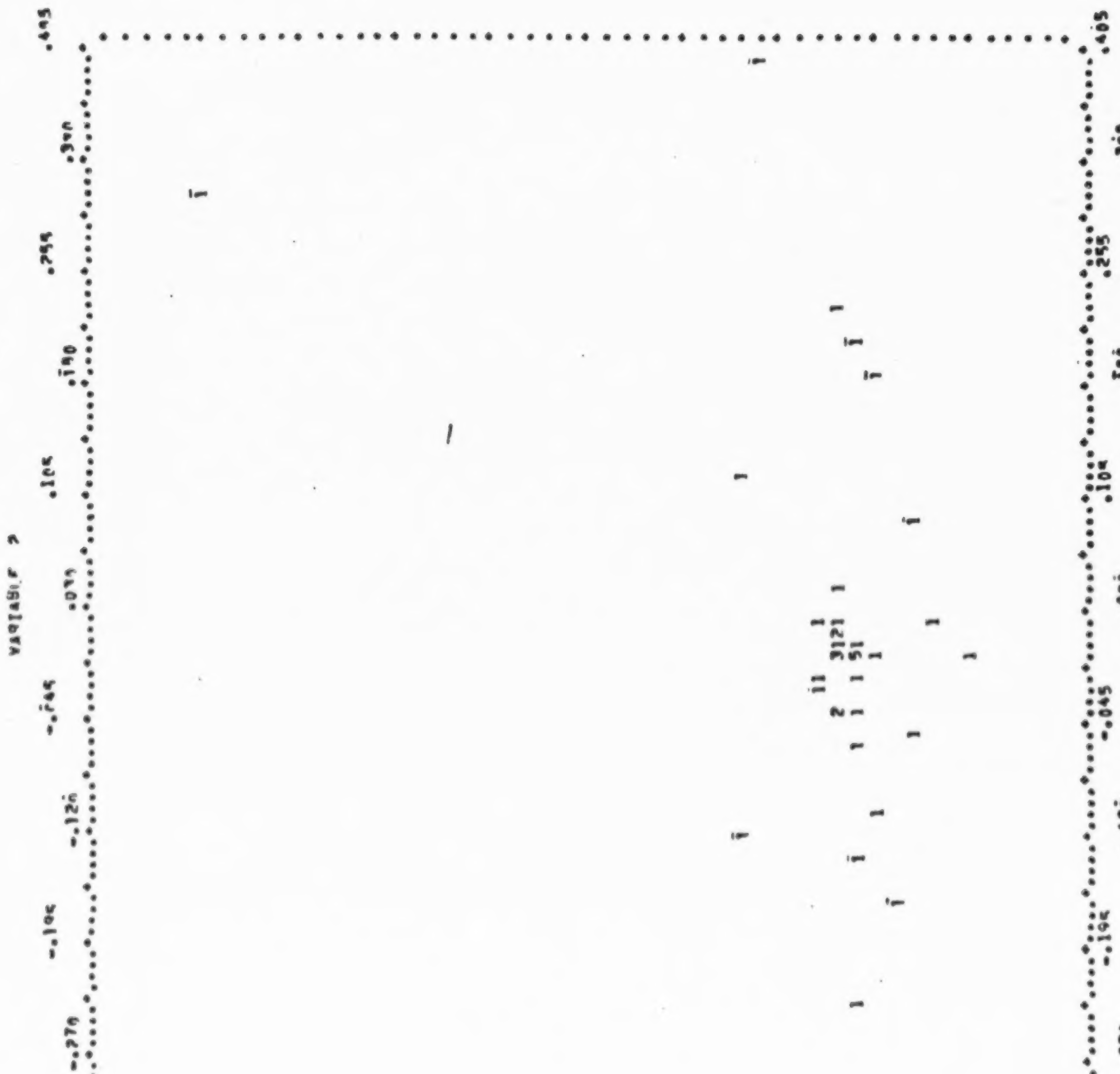
.225
.195
.165
.135
.105
.075
.045
.015
-.015
-.045
-.075
-.105
-.135
-.165
-.195
-.225
-.255
-.285
-.315
-.345

Figure 6

Scatterplot of Factor Analysis Structural Regression Coefficients

for Grades Two and Six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VARIABLE 3
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.255
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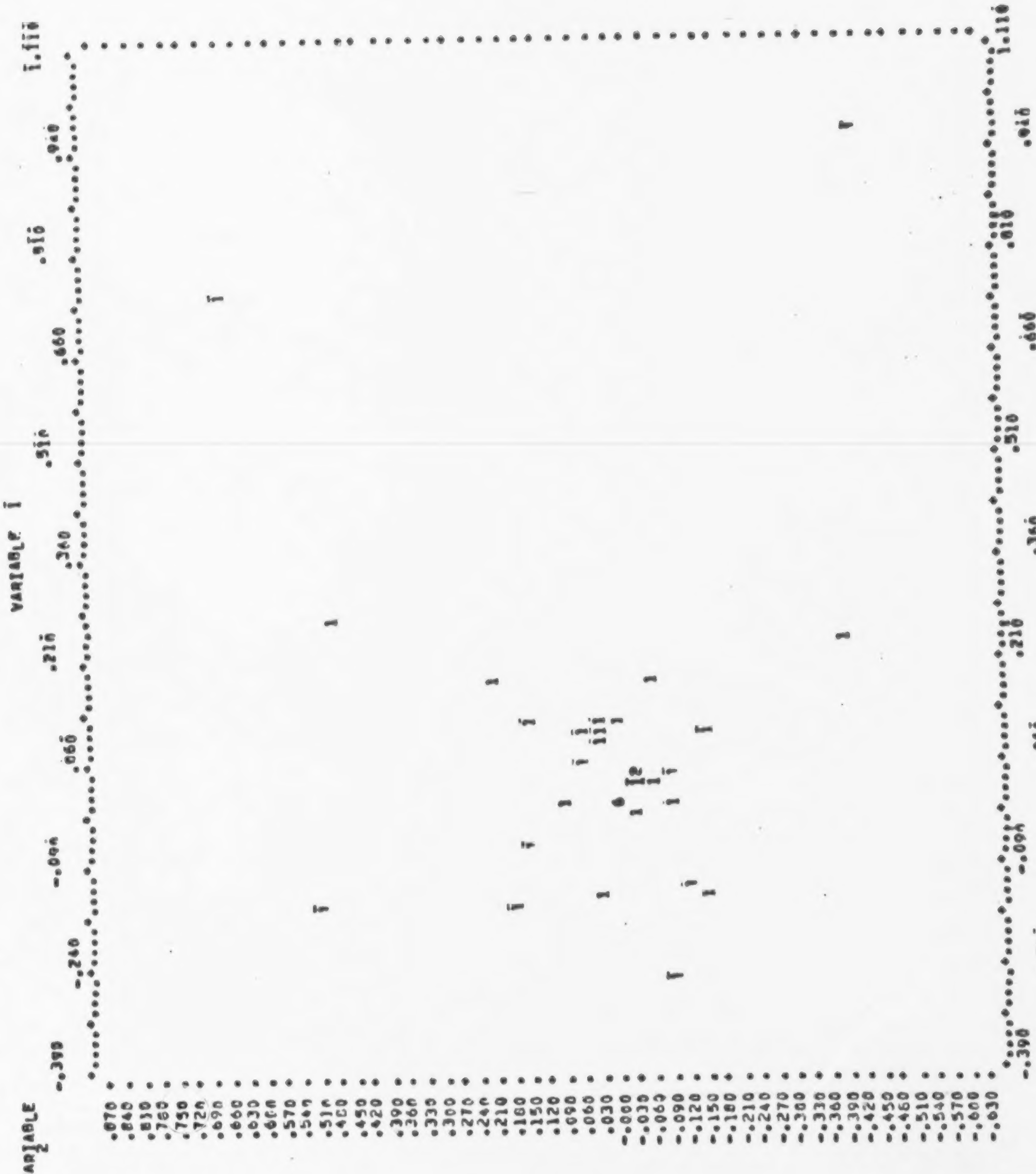
.405
1.155
-.345

324

Figure 7

Scatterplot of Least-Squares Regression Coefficients

for Whites and Negroes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.660
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.960
1.110
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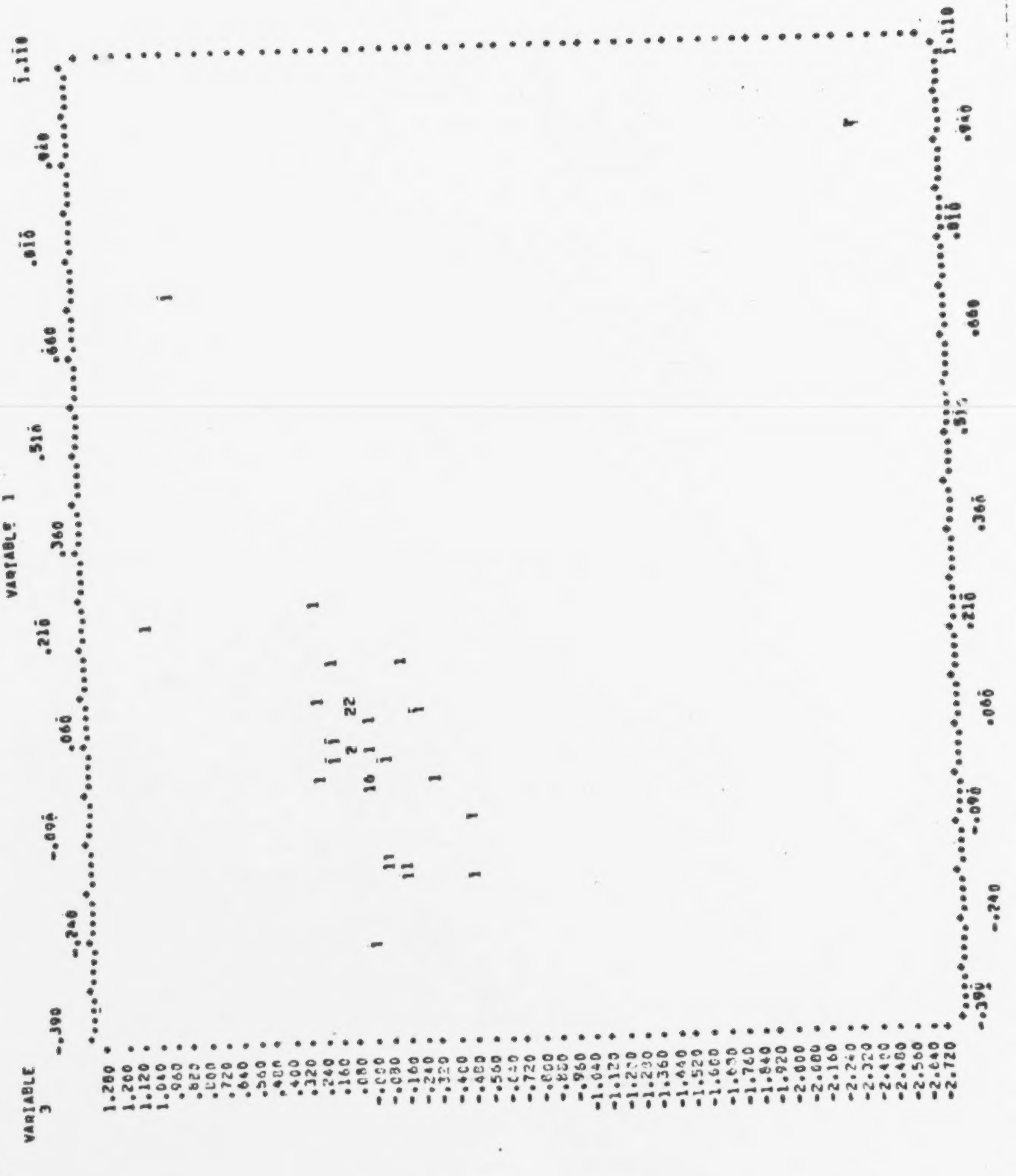
-.630

Figure 8

Scatterplot of Least-Squares Regression Coefficients

for Whites and Spanish Surnamed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1.040
.960
.880
.800
.720
.640
.560
.480
.400
.320
.240
.160
.080
-.000
-.080
-.160
-.240
-.320
-.400
-.480
-.560
-.640
-.720
-.800
-.880
-.960
-1.040
-1.120
-1.200
-1.280
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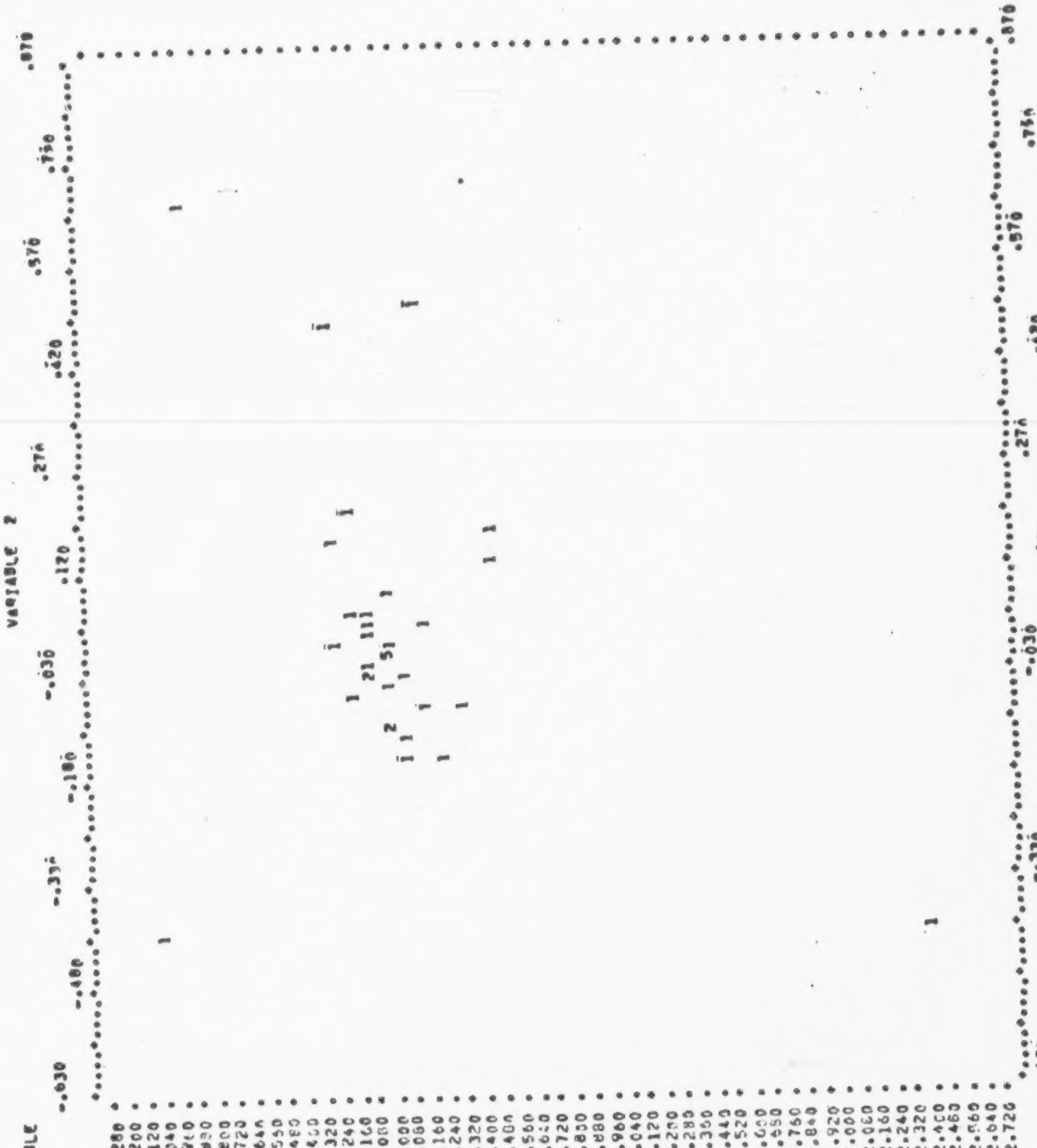
-1.920
-2.000
-2.080
-2.160
-2.240
-2.320
-2.400
-2.480
-2.560
-2.640
-2.720

Figure 9

Scatterplot of Least-Squares Regression Coefficients

for Negroes and Spanish Surnamed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.570
.720
.870
VARIABLE 3
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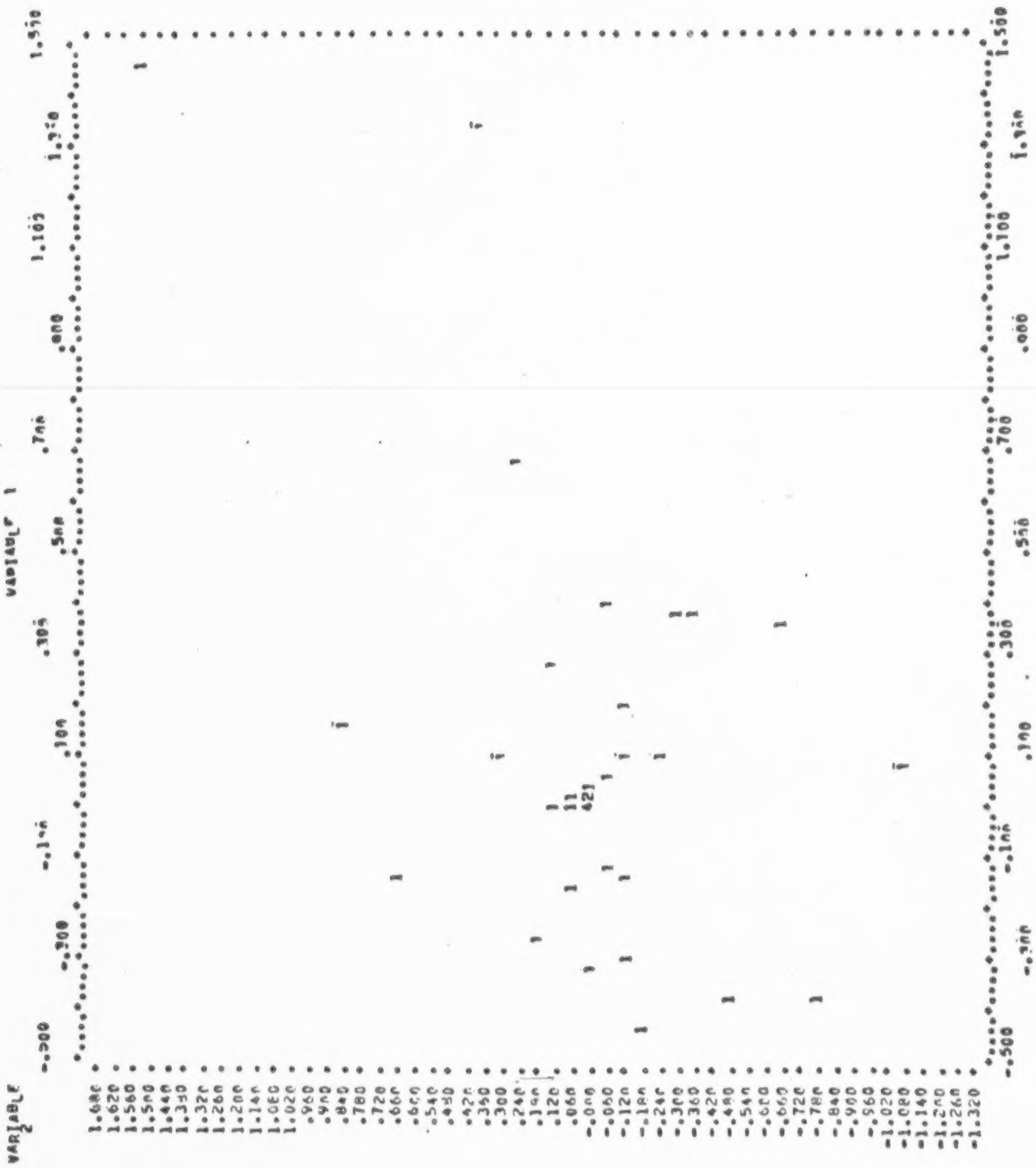
1.200
1.120
1.040
.960
.880
.800
.720
.640
.560
.480
.400
.320
.240
.160
.080
-.000
-.080
-.160
-.240
-.320
-.400
-.480
-.560
-.640
-.720
-.800
-.880
-.960
-1.040
-1.120
-1.200
-1.280
-1.360
-1.440
-1.520
-1.600
-1.680
-1.760
-1.840
-1.920
-2.000
-2.080
-2.160
-2.240
-2.320
-2.400
-2.480
-2.560
-2.640
-2.720

Figure 10

Scatterplot of Factor Analysis Structural Regression Coefficients

for Whites and Negroes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1.560
1.500
1.440
1.380
1.320
1.260
1.200
1.140
1.080
1.020
.960
.900
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.720
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.600
.540
.480
.420
.360
.300
.240
.180
.120
.060
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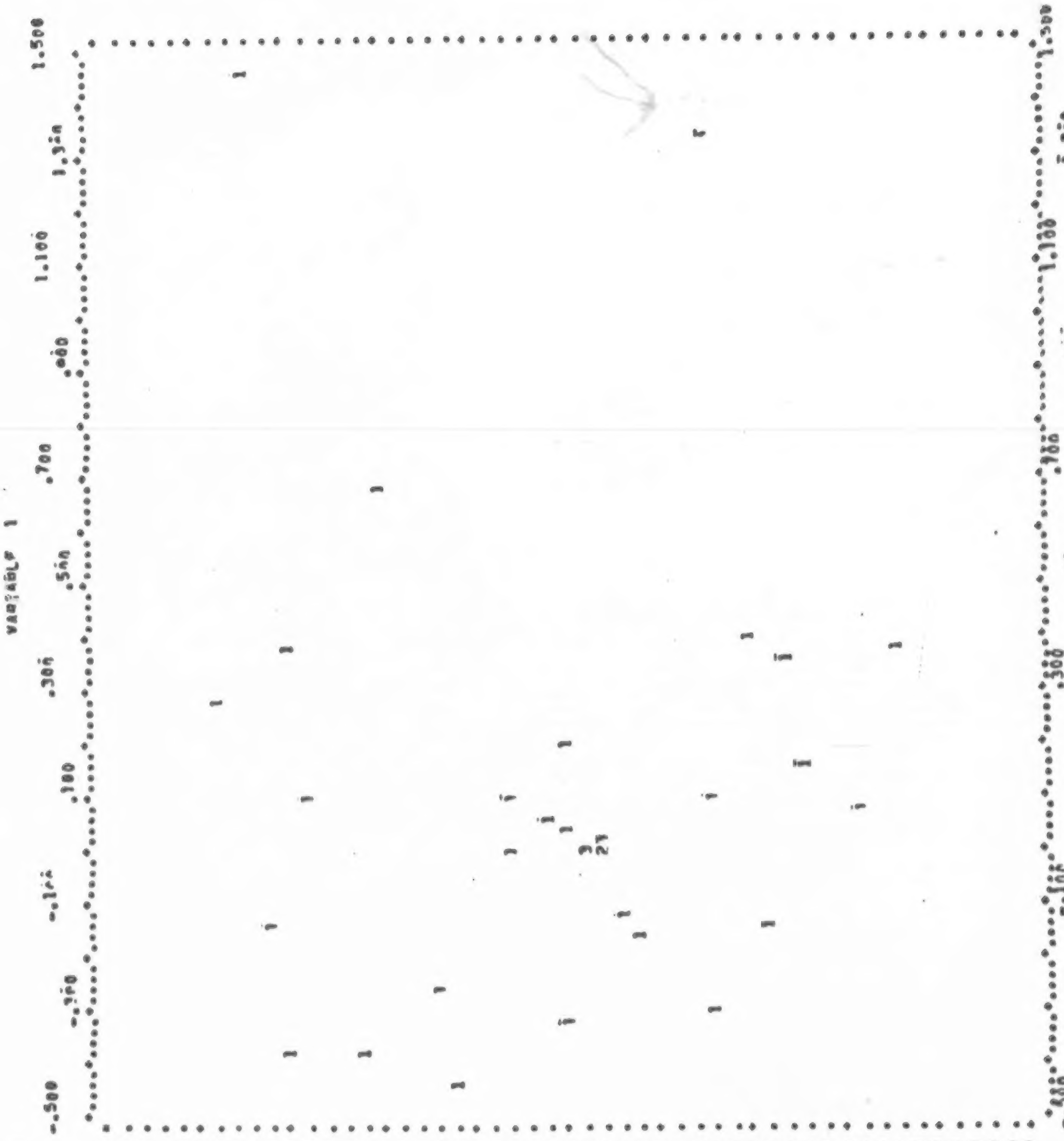
-.120
-.180
-.240
-.300
-.360
-.420
-.480
-.540
-.600
-.660
-.720
-.780
-.840
-.900
-.960
-1.020
-1.080
-1.140
-1.200
-1.260
-1.320

Figure 11

Scatterplot of Factor Analysis Structural Regression Coefficients

for Whites and Spanish Surnamed


VARIABLE 1
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.900
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1.300
1.500
1.590
1.530
1.470
1.410
1.350
1.290
1.230
1.170
1.110
1.050
.990
.930
.870
.810
.750
.690
.630
.570
.510
.450
.390
.330
.270
.210
.150
.090
.030
-.030
-.090
-.150
-.210
-.270
-.330
-.390
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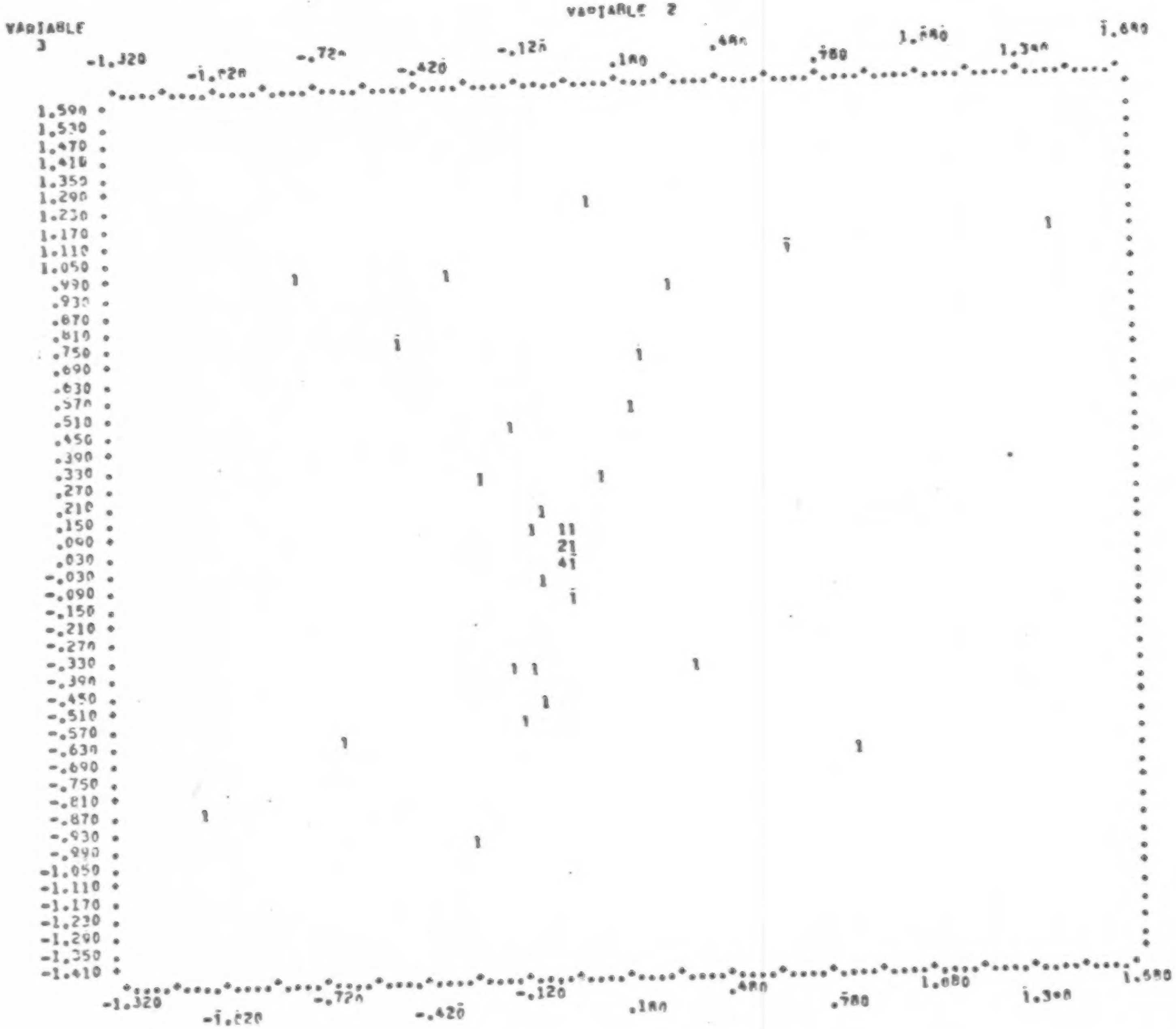
-.510
-.570
-.630
-.690
-.750
-.810
-.870
-.930
-.990
-1.050
-1.110
-1.170
-1.230
-1.290
-1.350
-1.410

Figure 12

Scatterplot of Factor Analysis Structural Regression Coefficients for Negroes and Spanish Surnamed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1.230
1.170
1.110
1.050
.990
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-1.050
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-1.290
-1.350
-1.410

336

The least-squares solutions have constant signs for the racial groups for 14 of the 39 variables. The factor analysis structural regression solutions also have constant signs for 14 of the 39 variables, but not always the same variables as in the least-squares solutions.

Scatterplots of the solutions across racial groups are presented in Figures 7 through 12. These scatterplots indicate that neither the least-squares nor the factor analysis structural regression solutions show much stability across racial groups. Perhaps this is due in part to the unreliable data of the 1968-69 Compensatory Education Evaluation as shown by the low correlations among the variables (reported in the **Addendum**).

Although the solutions are not stable across racial groups, an important result can be seen. Factor analysis structural regression coefficients tend to have larger absolute values than do the least-squares solution for the same variables. It can also be seen that the factor analysis structural regression coefficients tend to be larger for the separate racial groups than they were in the solutions for grades two, four, and six.

Solutions for Parallel Halves of the Set of Variables

Tables 9 through 14 give the results of splitting the set of variables into roughly parallel halves for separate analyses. Solutions are given for the total fourth grade sample and for the three major racial groups within the fourth grade sample.

TABLE 9

LEAST-SQUARES SOLUTIONS FOR LIST A

	Fourth Grade	Negro	White	Spanish Surnamed
1. Sex	-00162	00183	-00343	-00150
2. Months in class	02587	00566	02833	-11776
3. Absences/month	-12698	-42234	45750	-49674
4. Delinquent	39615	-30704	69853	29107
5. Kindergarten	07341	15598	-02965	-00667
6. Occupation-HOH	04657	-05240	22982	28137
7. Welfare	-01270	00003	00017	00016
8. Gross income	00006	-01468	02960	-00023
9. Expect/attitude	08174	-02782	03286	00311
10. Parent aspiration	-02607	18299	08008	-02864
11. P-T contact (behavior)	-08705	16312	15629	21206
12. Recent reading level	82463	19870	12992	-03259
13. Regular reading	-14953	-08211	-04778	13959
14. Disadvantaged reading	-09667	00000	-00085	-00080
15. Years remedial reading	-01946	-11067	11890	05138
16. Number in household	-02705	-00750	-12702	-04045
17. Parent support	02162	73810	79939	56493
18. Months since test	01300	01827	09316	01037
	Mult R .6453	Mult R .6421	Mult R .7572	Mult R .7197
	$F_{18,2710}$ 107.46	$F_{18,1401}$ 54.61	$F_{18,915}$ 68.32	$F_{18,344}$ 20.54

TABLE 10

FACTOR ANALYSIS STRUCTURAL REGRESSION SOLUTIONS (OVERFACTOR) FOR LIST A

	Fourth Grade	Negro	White	Spanish Surnamed
1. Sex	-34333	-00385	-01006	-00116
2. Months in class	16436	85575	1.09040	-47245
3. Absences/month	08335	-00839	02710	-00227
4. Delinquent	00289	00530	03567	01138
5. Kindergarten	52109	25304	06346	-05741
6. Occupation-HOH	1.12205	-00596	-03874	22813
7. Welfare	03033	00000	00000	00000
8. Gross income	00000	-09131	-01462	-03280
9. Expect/attitude	76237	-82602	00419	-35551
10. Parent aspiration	26109	05495	17263	-61960
11. P-T contact (behavior)	02207	-53450	-83570	14834
12. Recent reading level	2.10267	42191	47115	-01374
13. Regular reading	-32184	-32735	13011	01879
14. Disadvantaged reading	60355	00005	-00023	00005
15. Years remedial reading	01354	-11407	03281	-01329
16. Number in household	-06242	-64850	-1.15767	42700
17. Parent support	-92954	1.77607	1.53320	1.09143
18. Months since test	06221	-08290	09959	-00034

TABLE 11

FACTOR ANALYSIS STRUCTURAL REGRESSION SOLUTIONS (UNDERFACTOR) FOR LIST A

	Fourth Grade	Negro	White	Spanish Surnamed
1. Sex	00000	00000	00000	00000
2. Months in class	00000	00000	00000	00000
3. Absences/month	00000	00000	00000	00000
4. Delinquent	00000	00000	00000	00000
5. Kindergarten	00000	00000	00000	00000
6. Occupation-HOH	00000	00000	00000	00000
7. Welfare	00000	00000	00002	00001
8. Gross income	00000	00000	00000	00000
9. Expect/attitude	00000	00000	00000	00000
10. Parent aspiration	00000	00000	00000	00000
11. P-T contact (behavior)	00000	00000	00000	00000
12. Recent reading level	00000	00000	00000	00000
13. Regular reading	00000	00000	00000	00000
14. Disadvantaged reading	00000	00000	00000	00000
15. Years remedial reading	00000	00000	00000	00000
16. Number in household	00000	00000	00000	00000
17. Parent support	00000	00000	00000	00000
18. Months since test	00000	00000	00000	00000

340

TABLE 12

LEAST-SQUARES SOLUTIONS FOR LIST B

	Fourth Grade	Negro	White	Spanish Surnamed
1. Age	-01704	15696	08493	-03624
2. Number schools	-00703	03237	28311	08185
3. Neglected child	-01742	01731	-10488	-17766
4. Migrant child	-00582	-11229	27020	00000
5. Pre-Kindergarten	02745	-15222	-24368	17579
6. Home non-English	03230	09731	04081	08595
7. Poverty level	06865	33782	00714	00342
8. Education-HOH	01587	00003	00015	00005
9. Mother employed	-01546	01407	16499	14917
10. Urbanism	-03280	-12380	00680	-01629
11. Expect/ability	12372	-08445	-10248	03013
12. P-T contact (progress)	00827	94195	95565	80447
13. P-T contact (other)	00997	26298	-07158	-13106
14. Hours disadvantaged reading	-03615	02236	03831	-17840
15. Outside reading	03125	-00667	01757	-02086
16. Parent college talk	-02499	-02590	-00437	-00794
17. Reading pretest	64096	-16450	-06416	-00086
18. Months since test	03234	13918	20663	-02801
	Mult R .7612	Mult R .4856	Mult R .5944	Mult R .7182
	$F_{18,2710}$ 207.39	$F_{18,1401}$ 24.02	$F_{18,915}$ 27.77	$F_{12,345}$ 21.62

TABLE 13

FACTOR ANALYSIS STRUCTURAL REGRESSION SOLUTIONS (OVERFACTOR) FOR LIST B

	Fourth Grade	Negro	White	Spanish Surnamed
1. Age	00120	14717	1.63981	19215
2. Number schools	-12898	04261	1.91462	-01224
3. Neglected child	-00064	-04902	07044	01480
4. Migrant child	-00146	-00764	03775	00000
5. Pre-Kindergarten	10522	12258	35206	29141
6. Home non-English	-06527	-82017	-48351	83620
7. Poverty level	00000	-03554	01421	07272
8. Education-HOH	01577	00000	00000	00000
9. Mother employed	00294	1.91273	1.01821	47617
10. Urbanism	-30591	67300	11400	08278
11. Expect/ability	13563	-66745	-1.27700	-23500
12. P-T contact (progress)	10101	1.47516	3.60285	1.66939
13. P-T contact (other)	-02573	-15890	-31468	08659
14. Hours disadvantaged reading	-00002	13209	37915	-44894
15. Outside reading	-02815	05820	12123	-00185
16. Parent college talk	-16219	-07258	24056	-07514
17. Reading pretest	1.36425	-1.33758	-1.88429	-38140
18. Months since test	-00513	53834	39296	-01506

TABLE 14

FACTOR ANALYSIS STRUCTURAL REGRESSION SOLUTIONS (UNDERFACTOR) FOR LIST B

	Fourth Grade	Negro	White	Spanish Surnamed
1. Age	00000	00000	00000	00158
2. Number of schools	00000	00000	00000	-00863
3. Neglected child	00000	00000	00000	00218
4. Migrant child	00000	00000	00000	00000
5. Pre-Kindergarten	00000	00000	00000	-00010
6. Home non-English	00000	00000	00000	-01423
7. Poverty level	00000	00000	00000	00371
8. Education-HOH	00000	00000	00000	00000
9. Mother employed	00000	00000	00000	01733
10. Urbanism	00000	00000	00000	-02129
11. Expect/ability	00000	00000	00000	-00301
12. P-T contact (progress)	00000	00000	00000	00795
13. P-T contact (other)	00000	00000	00000	00054
14. Hours disadvantaged reading	00000	00000	00000	-00539
15. Outside reading	00000	00000	00000	-10192
16. Parent college talk	00000	00000	00000	-01096
17. Reading pretest	00000	00000	00000	00066
18. Months since test	00000	00000	00000	03731

The results indicate that changing the set of variables in the analysis will change the regression coefficients. It was expected that this would affect the factor analysis structural regression coefficients less than it would affect the least-squares coefficients. Comparing these tables with Tables 6 and 8, it seems that the least-squares coefficients did not change as much as the factor analysis structural regression coefficients. The latter coefficients tended to increase when fewer variables were analyzed.

Again the factor analysis structural regression coefficients are greater than the least-squares solutions. Substantial coefficients hold across racial groups for many of the variables. This stability is true for both lists A and B. The grade four coefficients do not fit the stable pattern of the coefficients of the separate racial groups. Perhaps the heterogeneity of these racial groups attenuates their predictive value when they are pooled.

REFERENCES

Blalock, Hubert M., Jr., Causal Inferences in Nonexperimental Research, University of North Carolina Press: Chapel Hill, 1964.

Dixon, W. J., (ed.) Biomedical Computer Programs, Health Services Computing Facility, School of Medicine, University of California: Los Angeles, 1965.

Dyer, Henry, The Dyer Analysis Plan, Educational Testing Service: Princeton, 1969 (mimeo).

Finn, Jeremy D., Multivariance, Version 4, State University of New York at Buffalo: Buffalo, June, 1968.

Glass, Gene V, Analysis of Data from the 1969 Survey of Compensatory Education: Preliminary Report. Laboratory of Educational Research, University of Colorado, 1970.

Jurs, Stephen G., Factor-Analysis Structural Regression, Compensatory Education Evaluation 1968-69, Technical Report No. 10, Laboratory of Educational Research, University of Colorado, February, 1970.

Tryon, R. C., and Bailey, D. E. (eds.), User's Manual for the BCTRY System of Cluster and Factor Analysis, University of Colorado, Boulder, 1965.

ADDENDUM

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TABLE 15

SCORING OF VARIABLES

1. Sex	1 = male	2 = female
2. Age	Age in months as of January 1, 1969	
3. Months in class	April = 0, March = 1, . . ., August = 8	
4. Absences per month		
5. Number of schools attended	1 = 1, . . .	4 or more = 4
6. Neglected child	1 = No	2 = Yes
7. Delinquent child	1 = No	2 = Yes
8. Migrant child	1 = No	2 = Yes
9. Kindergarten attendance	1 = Yes	2 = No
10. Pre-Kindergarten attendance	1 = Yes	2 = No
11. American Indian	0 = No	1 = Yes
12. Negro	0 = No	1 = Yes
13. Oriental	0 = No	1 = Yes
14. Spanish surnamed	0 = No	1 = Yes
15. Home language non-English	1 = Yes	2 = No

TABLE 15 (Continued)

SCORING OF VARIABLES

16. Occupational level of head of household	0 = Unclassifiable 1 = Unskilled 2 = Semi-skilled 3 = Skilled 4 = Owner-manager 5 = Technical 6 = Professional	
17. Family on welfare	1 = Yes	2 = No
18. Gross family income	1 = $ 1,500 2 = 3,750 3 = 5,250 4 = 6,750 5 = 8,250 6 = 10,000	
19. Poverty level	Item 18 divided by number in family	
20. Education level of head of household	1 = Little or none 2 = Grade school 3 = Some high school 4 = Completed high school 5 = Post high school 6 = Completed college	

TABLE 15 (Continued)

SCORING OF VARIABLES

21. Mother employed	1 = Mother not in home 2 = Part-time 3 = Full time 4 = Not employed
22. Urbanism of home	1 = Residential 2 = Residential and commercial 3 = Rural
23. Expectation/attitude 24. Expectation/ability	1 = Eighth grade or less 2 = Ninth or tenth grade 3 = Not high school completion 4 = Graduate from high school 5 = Enter college 6 = Other post high school
25. Parents' aspirations	1 = Want best 2 = Want above average 3 = Want average 4 = Want passing 5 = Little concern
26. Parent-teacher contact regarding progress	Range from 0 to 3 contacts
27. Parent-teacher contact regarding behavior	Range from 0 to 3 contacts

TABLE 15 (Continued)

SCORING OF VARIABLES

28.	Parent-teacher contact regarding "other"	Range from 0 to 3 contacts
29.	Recent reading level	Above = 3 At = 2 Below = 1
30.	Participation in regular reading	1 = No 2 = Yes
31.	Participation in disadvantaged reading program	None = 1 One = 2 More than one = 3
32.	Hours of disadvantaged reading program	Cannot exceed 1000
33.	Number of years of remedial reading	
34.	Number in pupil's household	
35.	Outside reading	1 = No 2 = Yes
36.	Parental academic support	Range 0 to 3
37.	Parental talk of college	Range 0 to 3
38.	Pretest reading score in grade equivalents	
39.	Number of months between pre- and posttests	
40.	Posttest reading score in grade equivalents	

GRADE TWO CORRELATION MATRIX 40 VARIABLES

ROW/COLUMN	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	-.06	.03	.05	-.02	-.04	-.03	.01	-.01	-.01	-.03	-.03	-.02	.06	-.07	.04	-.01	.02	-.02	-.04
2		-.05	.11	.08	-.01	-.01	-.04	.02	.01	-.00	-.01	-.02	.03	-.01	-.03	.05	-.06	-.01	.12
3			-.48	-.33	-.03	.00	.03	.01	.02	.00	-.01	.00	-.10	.09	.07	-.08	.01	-.00	-.09
4				.22	.03	-.02	.03	-.02	.02	-.01	.05	-.02	.10	-.10	-.09	.19	-.09	-.08	.07
5					.09	.04	.08	-.02	.01	-.02	.04	-.03	.02	-.04	-.03	.12	-.07	.02	.04
6						.30	.09	.04	.00	-.00	.08	-.01	-.03	.02	-.06	.05	-.05	.06	-.00
7							.31	-.01	.05	-.00	-.01	-.00	.01	-.05	-.01	.00	.00	-.01	-.05
8								.01	-.04	-.01	.10	-.01	-.01	-.00	-.03	-.04	-.02	-.06	.03
9									.14	-.02	-.20	-.04	.14	-.11	.03	.01	-.14	-.07	-.08
10										-.00	-.14	-.03	-.03	.02	.02	-.05	.08	.07	.01
11											-.03	-.00	-.01	.01	.02	-.02	-.01	-.03	-.02
12												-.06	-.49	.48	-.15	.14	-.17	-.14	.07
13													-.02	-.03	-.01	-.03	.12	.10	.02
14														-.91	-.02	.06	-.07	-.05	-.06
15															.03	-.06	.06	.05	.07
16																-.25	.32	.24	.07
17																	-.38	-.22	-.05
18																		.59	.10
19																			.09

ROW/COLUMN	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	-.01	.01	.15	.10	-.06	-.07	-.20	.01	.13	.05	-.00	.01	-.02	.02	.12	.08	-.01	.11	.04	.04
2	.02	-.01	-.10	-.10	.12	-.04	-.01	.03	-.06	.02	-.03	-.00	.05	.00	-.03	-.05	.10	-.02	.03	.00
3	.03	-.13	.06	.05	-.15	.10	.00	.05	-.00	-.00	-.02	-.01	-.10	-.04	.04	.09	-.01	.07	.08	.00
4	-.09	.15	-.21	-.19	.23	-.12	-.03	.03	-.14	-.03	-.02	-.03	.10	.08	-.09	-.09	.07	-.18	-.16	.05
5	-.05	.06	-.13	-.11	.19	-.12	-.04	-.03	-.05	-.01	.03	.01	.14	-.01	-.05	-.11	.03	-.09	-.04	.03
6	-.08	-.03	-.12	-.06	.05	-.03	.02	.00	-.05	.02	-.04	-.04	.02	-.08	.02	-.01	.02	-.05	-.03	-.03
7	-.06	-.03	-.03	-.04	.00	-.03	-.02	-.03	.00	.02	-.02	-.02	-.00	.00	-.02	-.04	.00	.02	-.01	.04
8	-.03	.12	-.02	-.03	.03	-.13	-.04	-.06	-.02	.05	-.03	.01	.06	.13	-.02	-.01	.04	-.08	-.07	-.04
9	-.00	-.13	-.12	-.08	.07	-.09	-.09	.02	-.10	-.12	-.02	.04	-.06	.02	-.07	-.02	.05	-.05	-.10	-.04
10	-.13	-.09	-.03	-.04	.04	-.01	.03	.02	-.04	-.01	.01	.02	-.05	-.08	.01	-.10	.04	-.01	.02	-.00
11	.05	.05	.03	-.05	.02	.00	.03	.04	-.03	.01	-.02	-.02	-.02	.10	-.00	.04	.03	-.03	-.02	-.03
12	.09	.16	.03	.07	-.00	.02	.12	-.01	.02	.08	.00	-.02	.17	.09	.07	.04	-.08	-.03	-.03	.00
13	.02	-.03	.06	.03	-.06	.05	.04	.00	.05	-.06	.02	.05	.04	-.03	.02	.03	.01	.02	.03	.07
14	-.05	.04	-.07	-.08	.02	-.14	-.07	-.03	-.07	-.06	.03	.08	-.01	.05	-.04	-.06	.03	-.10	-.13	.03
15	.06	-.06	.08	.09	-.04	.12	.07	.04	.07	.06	-.03	-.10	.02	-.05	.03	.06	-.02	.12	.14	-.02
16	.11	-.10	.11	.08	-.13	.07	-.01	.05	.07	.02	-.02	-.04	-.11	-.07	.04	.09	-.09	.17	.15	.03
17	-.17	.14	-.14	-.07	.17	-.07	.05	-.05	-.09	.01	-.01	.02	.03	.06	-.08	-.14	.05	-.13	-.11	.05
18	.10	-.04	.20	.15	-.21	.15	.07	-.02	.17	.04	.05	-.01	-.09	-.09	.10	.15	-.10	.23	.21	.05
19	.17	-.02	.15	.12	-.14	.15	.09	.01	.13	.08	.02	-.02	-.05	-.62	.11	.08	-.02	.18	.20	.04
20	.05	-.05	.13	.12	.04	.00	.04	.04	.09	.03	.01	-.05	.08	-.01	.05	.07	.08	.04	.03	.00
21		.03	.11	.12	-.11	.02	.08	-.03	.08	.02	-.01	-.03	.00	-.15	.05	.08	-.09	.10	.10	-.04
22			.02	.03	.08	-.07	.03	-.10	.06	.04	.00	-.02	.13	.03	.01	-.07	-.00	-.13	-.05	.05
23				.81	-.50	.06	-.06	.04	.60	.13	-.08	-.10	-.08	-.11	.41	.30	-.18	.48	.34	-.08
24					-.42	.03	.00	.03	.59	.14	-.11	-.09	-.07	-.09	.40	.28	-.15	.49	.31	-.07
25						-.27	-.05	-.07	-.38	-.09	.05	.06	.14	.10	-.27	-.30	.32	-.32	-.20	.02
26							.58	.17	-.00	-.03	.06	.02	-.02	-.16	.12	.13	-.17	.03	.02	-.04
27								.10	-.06	-.02	.05	.04	.08	-.09	.05	-.10	-.11	-.05	-.06	.01
28									-.02	-.01	-.04	-.08	-.02	-.05	.07	.07	-.08	.05	.00	-.03
29										.13	-.12	-.12	-.04	-.07	.31	.20	-.21	.61	.46	-.04
30											-.28	-.41	-.02	-.09	.03	.04	-.04	.08	.06	.05
31												.63	.20	-.01	.00	-.08	.05	-.16	-.12	-.14
32													.06	.03	-.03	-.09	.08	-.13	-.12	-.10
33														.01	-.05	-.05	.07	-.11	-.10	-.00
34															-.08	-.04	-.01	-.11	-.11	-.04
35																.22	-.08	.25	.13	-.07
36																	-.21	.19	.13	-.02
37																		-.16	-.12	-.01
38																			.57	-.04
39																				-.00

TABLE 16

GRADE FOUR CORRELATION MATRIX 40 VARIABLES

ROW/COLUMN	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	-.06	-.01	.05	-.01	-.02	.01	.00	-.03	-.04	.00	.02	-.01	-.00	-.02	-.03	.03	-.05	-.06	-.01
2		-.04	.07	.11	.03	.03	.04	.09	.05	.02	-.03	.01	.03	-.02	-.02	.05	-.06	-.06	-.01
3			-.53	-.25	-.01	.04	-.03	.09	-.13	-.00	.07	-.00	-.10	.08	.01	-.09	-.06	-.04	-.07
4				.20	.05	.00	.01	-.01	.11	-.01	-.00	.00	.10	-.03	-.07	.22	-.09	-.05	.01
5					.04	.02	.03	.04	.09	.02	.04	-.00	-.01	.03	-.08	.13	-.11	-.07	-.02
6						.27	.05	.00	.02	-.01	.09	-.01	-.04	.04	-.04	.05	-.05	-.05	.01
7							.09	.01	-.02	-.00	.00	-.00	-.02	.03	.02	.04	-.04	-.04	.00
8								.05	.02	-.01	.06	-.01	-.02	.02	-.05	.02	-.05	-.03	-.04
9									.02	.03	-.05	-.01	.03	.01	-.02	.01	-.17	-.16	-.12
10										.01	-.14	.00	.08	-.08	.02	.05	.07	.02	.03
11											-.08	-.00	-.02	-.02	-.00	-.02	-.01	.01	-.04
12												-.06	-.41	.59	-.18	.15	-.28	-.21	-.04
13													-.02	-.09	.02	-.01	.02	.03	-.02
14														-.83	-.04	.14	-.10	-.03	-.06
15															.04	-.11	.07	.05	.08
16																-.27	.33	.22	.13
17																	-.41	-.26	-.02
18																		.65	.18
19																			.18

ROW/COLUMN	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	-.03	.03	.10	.10	-.05	-.04	-.13	.02	.12	.02	-.06	-.03	-.02	.03	.09	.08	.03	.07	.06	-.01
2	-.05	-.02	-.19	-.18	.16	-.05	-.03	.00	-.13	-.02	.06	.05	.08	.05	-.09	-.05	.04	-.10	-.10	-.01
3	.05	-.01	.05	.05	-.07	.04	.00	.02	.03	.02	.00	.01	-.11	.02	.00	.07	-.07	.06	.06	.05
4	-.11	.06	-.15	-.11	.15	-.08	-.00	.01	-.08	-.02	.02	.02	.10	.04	-.07	-.09	.08	-.13	-.11	.01
5	-.01	.04	-.10	-.12	.14	-.09	-.00	-.03	-.10	-.01	.03	.02	.08	.02	-.04	-.05	.04	-.09	-.09	-.03
6	.00	.00	-.12	-.09	.09	-.05	-.01	-.03	-.05	-.02	.02	-.00	.01	.04	-.06	-.01	.02	-.07	-.05	-.06
7	-.05	-.00	-.09	-.08	.06	-.03	-.01	-.01	-.05	-.02	.02	.02	.02	.06	-.01	-.02	-.01	-.02	-.04	-.02
8	-.02	.03	-.05	-.05	-.00	-.03	-.02	.00	.00	-.01	-.01	-.01	-.00	.03	.01	.04	-.01	-.04	-.04	-.02
9	-.01	-.12	-.16	-.18	.14	-.10	-.07	-.02	-.14	-.01	.03	.01	-.02	.10	-.07	-.03	.05	-.08	-.07	-.02
10	-.12	.06	-.08	-.07	.06	.03	.03	-.02	-.02	-.03	.00	.00	.04	.00	-.05	-.09	.05	-.02	-.04	-.03
11	-.02	-.00	.01	.01	.00	.05	-.02	.01	.01	.01	-.02	-.02	-.03	.00	-.02	.01	.00	.01	.01	-.03
12	.19	.09	-.06	-.07	-.01	-.02	.09	.02	-.10	-.02	.12	.13	.06	.11	-.02	.09	-.09	-.19	-.16	-.06
13	.06	.02	.05	.04	-.04	-.05	-.03	-.01	.08	-.01	-.00	-.01	.00	-.03	.02	.01	-.01	.06	.05	.01
14	-.08	.12	-.05	-.02	.07	-.06	-.03	-.01	-.09	-.09	.04	.04	.13	.03	-.04	-.14	.09	-.13	-.12	-.01
15	.08	-.13	.03	.01	-.07	.07	.02	.01	.08	.06	-.03	-.02	-.10	-.01	.04	.13	-.08	.13	.13	.02
16	.08	-.06	.13	.11	-.13	.10	.01	.03	.13	.04	-.07	-.07	-.09	-.05	.05	.08	-.06	.18	.17	.05
17	-.21	.12	-.19	-.16	.18	-.10	.01	-.05	-.15	-.01	.06	.04	.13	.09	-.10	-.10	.07	-.18	-.18	-.01
18	.07	-.08	.29	.26	-.23	.19	.08	.04	.26	.03	-.12	-.10	-.13	-.15	.14	.05	-.10	.31	.29	.11
19	.14	-.05	.26	.22	-.20	.16	.09	.08	.25	.02	-.09	-.07	-.08	-.68	.10	.02	-.06	.28	.26	.05
20	.02	-.06	.15	.12	-.01	.05	-.00	-.01	.13	-.02	-.05	-.06	.06	-.10	.06	-.01	.00	.14	.13	.08
21		-.06	.07	.07	-.06	-.02	.02	.05	.04	-.00	.00	-.01	-.03	-.13	.05	.07	-.07	.04	.05	-.03
22			-.01	.00	-.01	-.01	.05	.02	-.02	-.03	.04	.05	.07	.01	-.00	-.01	.01	-.09	-.08	.06
23				.82	-.50	.13	-.05	.09	.56	.04	-.17	-.11	-.13	-.14	.56	.25	-.23	.44	.42	.08
24					-.45	.08	-.01	.08	.58	.06	-.19	-.13	-.11	-.13	.56	.19	-.20	.43	.41	.07
25						-.31	-.11	-.11	-.43	-.07	.14	.08	.12	.12	-.22	-.23	.28	-.33	-.31	-.03
26							.40	.20	.08	.03	-.01	.03	-.05	-.10	.04	.09	-.11	.10	.08	.05
27								.15	-.04	-.01	.04	.01	.01	-.06	-.05	-.08	-.06	-.06	-.05	.03
28									.05	-.01	-.03	-.01	-.01	-.06	.06	.05	-.07	.08	.08	-.01
29										.05	-.24	-.17	-.13	-.13	.26	.16	-.19	.60	.59	.08
30											-.29	-.36	-.09	-.02	.01	.02	-.03	.02	.01	.06
31												.70	.20	.03	-.05	-.04	.03	-.20	-.21	-.12
32													.16	.03	-.05	-.00	.03	-.16	-.15	-.10
33														.00	-.07	-.07	.14	-.17	-.18	-.08
34															-.03	.00	-.02	-.15	-.13	.01
35																.18	-.12	.25	.21	.01
36																	-.26	.14	.15	.02
37																		-.17	-.18	.03
38																			.74	.09
39																				.07

TABLE 17

GRADE SIX CORRELATION MATRIX 40 VARIABLES

ROW/COLUMN	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	-.07	-.00	.02	.01	-.05	-.02	.00	-.03	-.01	.04	.03	-.00	-.01	-.00	-.02	.04	-.02	-.03	-.01
2		.01	.08	.13	.04	.01	-.01	.09	-.01	-.01	-.02	-.01	.07	-.07	-.05	.08	-.09	-.09	-.02
3			-.51	-.19	-.02	.05	-.04	.14	.01	-.01	.13	.00	-.14	.14	-.01	-.06	-.09	-.09	-.06
4				.18	.08	-.00	-.00	-.02	.01	-.02	-.04	-.03	.13	-.09	-.09	.18	-.06	-.02	.02
5					.05	.03	.04	-.01	-.01	.01	.04	-.01	.00	-.01	-.06	.09	-.10	-.03	.01
6						.58	.06	.06	.02	-.01	.07	-.01	-.03	.04	-.03	.11	-.09	-.07	-.03
7							.09	.03	.02	-.00	.03	-.00	-.03	.02	-.02	.05	-.06	-.05	-.06
8								.00	-.01	-.01	.04	-.01	.01	-.00	-.03	-.04	-.02	-.04	-.01
9									.13	-.02	-.09	.01	.03	.00	-.01	.02	-.19	-.18	-.10
10										.02	-.06	.01	.00	.00	-.03	.01	-.03	-.02	-.05
11											-.05	-.00	-.01	-.05	-.02	.03	-.00	-.02	-.01
12												-.06	-.36	.35	-.17	.13	-.27	-.22	.07
13													-.02	-.09	.02	-.03	.03	.02	.02
14														-.79	-.04	.16	-.06	-.03	-.04
15															.00	-.11	-.00	-.00	.06
16																-.27	.33	.23	.06
17																	-.44	-.24	-.02
18																		.58	.11
19																			.12

ROW/COLUMN	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	-.02	.03	.07	.06	-.06	-.00	-.09	-.00	.07	.00	-.01	-.02	.00	.04	.10	.05	-.02	.00	-.00	-.03
2	-.02	.04	-.19	-.18	.13	-.07	.02	-.01	-.17	-.01	.07	.06	.04	.07	-.08	-.09	.03	-.14	-.13	.05
3	.08	-.06	.03	-.00	-.03	-.00	-.05	.03	-.01	.04	-.04	-.04	-.11	.05	-.00	.04	-.05	-.01	.00	.15
4	-.09	.13	-.19	-.12	.14	-.06	.01	.01	-.09	-.03	.03	.01	.12	-.02	-.09	-.08	.07	-.07	-.09	-.08
5	-.04	.06	-.14	-.12	.11	-.03	.04	-.01	-.10	-.03	.09	.03	.08	-.03	-.04	-.08	.03	-.07	-.11	-.06
6	-.01	.03	-.14	-.13	.11	-.05	.01	-.00	-.38	-.00	-.00	-.00	.01	.03	-.10	-.02	.00	-.04	-.05	-.01
7	-.03	.07	-.08	-.07	.03	-.03	.06	-.00	-.05	.01	.03	.01	-.03	.01	-.04	-.05	.03	-.04	-.05	.01
8	.03	.02	-.06	-.06	.09	-.06	-.05	-.05	-.05	.02	-.00	-.01	.04	.06	-.03	.02	.00	-.01	-.03	-.05
9	-.02	-.12	-.14	-.12	.09	-.11	-.11	-.04	-.11	.06	.03	.02	-.08	.11	-.06	-.06	.05	-.05	-.05	.06
10	-.05	.05	-.04	-.03	.03	-.01	-.02	-.00	-.01	.10	.02	-.01	.01	.02	-.05	-.01	.04	-.04	-.03	-.01
11	.00	-.00	-.02	-.01	-.02	.07	-.03	-.02	.03	-.02	-.02	.02	-.00	.02	.02	-.01	-.00	-.02	.01	-.04
12	.18	.14	-.05	-.05	.06	-.01	.02	.06	-.16	-.08	.05	.08	.09	.14	-.10	.03	-.08	-.19	-.23	-.06
13	.00	.05	.02	.01	-.01	.01	-.02	-.01	.04	-.05	.03	.01	-.04	-.02	.02	.00	.00	.03	.06	-.01
14	-.07	.13	-.03	-.00	.05	-.04	-.01	-.02	-.00	.04	.05	.05	.06	.00	.04	-.06	-.01	-.10	-.08	-.13
15	.06	-.15	-.01	-.03	-.01	.04	-.02	.02	-.02	-.01	-.03	-.04	-.04	-.01	-.07	.06	.02	.09	.08	.12
16	.10	-.09	.14	.12	-.12	.12	.05	-.01	.12	.02	-.07	-.06	-.04	-.05	.09	.06	-.06	.14	.14	.04
17	-.21	.13	-.20	-.16	.18	-.09	.01	-.03	-.15	-.01	.09	.10	.10	.06	-.10	-.08	.08	-.16	-.15	-.06
18	.06	-.07	.30	.26	-.24	.19	.05	.02	.29	-.03	-.07	-.07	-.07	-.08	.14	.11	-.12	.26	.26	.04
19	.12	-.06	.21	.18	-.20	.21	.10	.10	.24	-.01	-.08	-.08	.02	-.64	.09	.06	-.04	.25	.25	.04
20	.04	-.02	.15	.13	-.01	.06	.03	.02	.08	-.03	.02	.02	.12	-.08	.04	.02	-.01	.08	.07	.02
21		-.02	.07	.04	-.05	.03	.08	.03	-.00	-.03	-.04	-.02	.00	-.11	.05	.03	-.09	.01	.02	-.04
22			-.04	-.05	.02	.00	.07	-.01	-.06	-.03	.03	.02	.04	.06	-.06	-.02	-.02	-.15	-.15	-.09
23				.80	-.49	.17	-.06	.08	.54	.02	-.13	-.13	-.10	-.12	.36	.26	-.28	.39	.37	.05
24					-.43	.15	-.00	.10	.57	.03	-.15	-.17	-.08	-.09	.33	.21	-.25	.38	.36	.02
25						-.30	-.09	-.14	-.45	-.03	.10	.10	.12	.09	-.26	-.22	.29	-.31	-.30	-.04
26							.40	.23	.09	-.02	-.00	.01	-.04	-.15	.12	.10	-.16	.11	.11	-.02
27								.20	-.02	-.00	.05	.01	.03	-.09	-.03	-.08	-.04	-.03	-.04	-.05
28									.02	-.03	-.00	.02	-.00	-.07	.01	.04	-.10	.06	.05	.01
29										-.02	-.20	-.18	-.11	-.11	.26	.16	-.20	.57	.56	.03
30											-.20	-.27	-.04	.03	.04	-.01	-.02	-.05	-.06	.07
31												.70	.20	.05	-.09	-.07	.05	-.16	-.18	-.19
32													.13	.07	-.08	-.08	.05	-.12	-.16	-.21
33														-.05	-.08	-.10	.15	-.13	-.16	-.16
34															-.04	.01	-.01	-.14	-.14	-.03
35																.18	-.19	.21	.19	-.01
36																	-.28	.12	.11	.01
37																		-.14	-.14	.04
38																			.72	.08
39																				.13

TABLE 18

CORRELATION MATRIX FOR NEGROES 36 VARIABLES

ROW/COLUMN	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	-.04	-.02	.04	-.02	-.02	.02	.01	-.03	-.04	-.01	-.01	.04	-.05	-.05	.04	-.05	.02
2		-.06	.10	.14	.04	.03	.04	.07	.07	.04	-.04	.06	-.05	-.07	.00	-.04	-.05
3			-.56	-.33	-.05	.03	-.04	.15	-.14	-.00	.01	-.10	-.08	-.07	-.07	.05	.02
4				.25	.06	.02	-.00	-.05	.15	-.00	-.07	.23	-.08	-.04	.01	-.16	.03
5					.03	.01	.02	-.00	.13	.00	-.10	.18	-.07	-.04	-.02	-.04	.02
6						.20	.03	.00	.04	.02	-.05	.09	-.04	-.04	-.00	-.02	-.01
7							.06	-.01	-.03	.01	.03	.06	-.06	-.04	-.01	-.06	-.02
8								.04	.03	.02	-.01	-.01	-.01	-.00	-.05	-.05	.02
9									.02	.03	-.03	.01	-.18	-.19	-.10	.01	-.12
10										.02	-.01	.09	.01	-.00	.04	-.11	.06
11											.04	.01	-.04	-.00	-.02	.01	.03
12												-.24	.24	.16	.11	.20	.05
13													-.39	-.22	-.01	-.33	.07
14														.57	.10	.18	.02
15															.14	.18	.03
16																.05	-.04
17																	-.14

ROW/COLUMN	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1	.14	.15	-.08	-.01	-.14	-.00	.17	.02	-.07	-.04	.01	.01	.10	.10	.01	.11	.11	-.00
2	-.19	-.18	.14	-.02	-.02	-.02	-.14	.02	.02	.05	.07	.04	-.06	-.07	.07	-.05	-.04	-.02
3	.07	.06	-.09	.03	-.02	.03	.03	.03	-.05	-.02	-.14	.04	-.02	.10	-.07	.03	.05	.09
4	-.16	-.12	.17	-.05	.01	-.04	-.07	-.03	.04	.04	.09	.03	-.06	-.12	.11	-.03	-.01	.00
5	-.16	-.12	.15	-.07	-.01	-.05	-.09	-.07	.05	.05	.08	-.00	-.02	-.10	.06	-.02	-.02	-.03
6	-.15	-.10	.13	-.07	-.05	-.03	-.07	-.01	.00	-.02	-.02	.02	-.06	-.02	.05	-.09	-.07	-.08
7	-.08	-.07	.08	-.06	-.04	.00	-.06	.02	-.00	.01	.01	.05	.02	-.01	.02	-.03	-.03	-.02
8	-.04	-.04	-.02	-.01	-.04	-.00	.03	.00	-.03	-.03	-.02	.02	.03	.04	-.01	-.03	-.01	-.03
9	-.14	-.16	.12	-.12	-.05	-.02	-.12	-.03	-.01	-.01	-.09	.16	-.05	-.01	.02	-.10	-.07	.00
10	-.11	-.10	.09	.03	.05	-.03	-.06	-.07	.05	.06	.09	.01	-.06	-.08	.06	-.01	-.07	-.03
11	-.03	-.04	-.02	.03	-.01	-.04	-.02	.01	-.04	-.04	.02	-.00	-.04	.03	.01	.00	.01	.03
12	.12	.09	-.12	.06	-.00	.05	.08	.03	-.04	-.05	-.06	-.02	.03	.09	-.09	.09	.04	.03
13	-.22	-.17	.18	-.08	-.00	-.08	-.11	.02	.02	-.00	.09	.06	-.07	-.12	.09	.00	.00	.00
14	.22	.20	-.19	.15	.11	.05	.16	-.03	.01	.01	-.02	-.08	.09	.03	-.15	.10	.06	.03
15	.22	.19	-.19	.14	.10	.05	.17	-.00	.00	-.00	.01	-.68	.03	-.01	-.08	.09	.09	-.04
16	.13	.11	.03	.02	.00	.01	.13	.01	-.01	-.04	.08	-.10	.05	-.01	-.00	.03	.05	-.02
17	.11	.11	-.09	.01	-.01	.04	.08	.03	-.02	-.04	-.09	-.13	.06	.09	-.10	.01	.03	-.02
18	.04	.05	-.03	.05	.02	.02	.00	-.03	.05	.07	.03	-.02	.00	-.06	.04	.11	.09	.10
19		.83	-.49	.13	-.05	.10	.56	.04	-.12	-.08	-.07	-.13	.35	.24	-.26	.26	.27	.03
20			-.44	.08	.00	.10	.56	.08	-.14	-.10	-.07	-.13	.34	.19	-.23	.28	.30	.04
21				-.31	-.10	-.13	-.39	-.08	.10	.06	.09	.13	-.21	-.24	.30	-.24	-.18	-.04
22					.44	.21	.07	.01	.02	.04	-.02	-.10	.05	.11	-.16	.14	.08	.06
23						.16	-.04	-.03	.02	-.02	.00	-.08	-.07	-.08	-.06	-.02	-.03	.07
24							.09	.05	-.06	-.05	-.01	-.04	.09	.09	-.07	.05	.09	.02
25								.04	-.19	-.14	-.06	-.09	.24	.16	-.23	.41	.42	.04
26									-.31	-.54	-.07	-.00	-.02	.02	-.06	.09	.14	.09
27										.70	.19	.01	-.02	-.04	.06	-.12	-.19	-.16
28											.17	.02	-.03	-.02	.07	-.07	-.13	-.12
29												-.05	-.06	-.07	.17	-.05	-.11	-.09
30													-.02	.01	.00	-.08	-.09	.07
31														.19	-.13	.10	.14	-.02
32															-.26	.01	.05	.01
33																-.08	-.08	.02
34																	.62	.21
35																		.29

TABLE 19

CORRELATION MATRIX FOR SPANISH SURNAMED

ROW/COLUMN	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	-.11	-.03	.03	.06	-.05	0.00	.03	.03	-.01	-.14	-.06	.01	-.09	-.12	-.08	.02	.05
2		.03	.01	-.00	.01	0.00	.02	.06	-.09	-.04	.02	.05	-.09	-.07	-.02	-.05	-.10
3			-.44	-.29	.01	0.00	-.02	-.10	-.00	-.02	.03	-.12	-.05	-.10	.01	-.00	.01
4				.16	.07	0.00	.03	.07	.09	-.09	-.14	.34	-.10	-.01	.03	-.09	-.02
5					-.04	0.00	-.01	-.04	.07	.00	.01	.03	-.03	-.03	-.10	.01	.05
6						0.00	-.00	-.05	.00	-.02	-.00	-.04	0.00	0.00	.10	-.00	.06
7							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8								.12	.04	-.03	-.07	.05	-.14	-.09	-.07	-.07	.04
9									-.07	.02	.05	.05	-.07	-.14	-.05	.03	-.07
10										-.00	-.05	.04	.11	.09	-.00	.03	.13
11											.18	-.09	.25	.14	.18	.07	-.15
12												-.28	.31	.10	.07	.12	-.04
13													-.31	-.17	-.01	-.22	.01
14														.65	.15	.29	.07
15															.12	.25	.07
16																.03	-.02
17																	.02

ROW/COLUMN	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1	.07	.05	-.03	-.08	-.08	.19	.06	.08	-.13	-.05	-.05	.06	-.00	.04	.04	.02	.06	-.09
2	-.15	-.09	.16	-.06	.00	-.01	-.09	-.14	.20	.15	.06	.06	-.09	.06	-.05	-.06	.00	-.05
3	.06	.08	.01	.07	.05	.04	.07	-.03	.10	.10	-.05	.05	.10	.01	-.03	.12	.11	-.03
4	-.13	-.18	.14	-.17	-.04	-.07	-.11	-.01	-.06	-.04	-.01	-.00	-.19	-.08	-.01	-.18	-.11	.13
5	-.09	-.07	.05	-.08	.02	.08	-.14	.11	-.00	.00	-.01	.06	-.00	.01	.04	-.13	-.05	.01
6	.02	.00	-.07	.09	.13	-.02	.05	-.12	-.03	-.03	.06	.03	-.12	-.08	.06	-.03	-.01	.02
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	.03	.03	-.05	-.08	-.06	.01	.01	-.13	.00	.02	.05	.08	-.05	-.04	.07	.01	-.03	-.05
9	-.14	-.18	.13	-.12	-.05	-.05	-.12	.08	.07	.01	.00	.05	-.08	-.01	.13	-.04	-.07	-.00
10	-.02	-.01	.03	-.03	.00	-.01	.03	.01	-.02	-.04	.02	-.06	.01	-.05	.04	-.01	-.03	-.00
11	.15	.11	-.15	.10	-.04	-.07	.24	-.07	-.04	-.03	.00	-.04	.15	.14	-.06	.25	.21	.09
12	.04	.03	-.14	.11	.08	.05	.07	.05	.02	-.02	-.03	.01	.07	.04	-.17	.19	.11	-.09
13	-.04	-.10	.13	-.07	-.01	-.08	-.11	.04	-.04	-.05	.08	.07	-.17	-.03	.03	-.16	-.10	.14
14	.28	.24	-.27	.11	.04	.01	.21	.04	-.12	-.15	-.05	-.20	.18	.03	-.08	.30	.21	.05
15	.20	.13	-.16	.09	.02	.02	.15	-.03	-.12	-.14	-.03	-.69	.05	-.01	.01	.22	.16	.06
16	.13	.12	-.03	.03	-.04	-.06	.12	-.07	-.13	-.13	.09	-.06	.11	.02	-.02	.11	.09	.20
17	.08	.07	-.08	.02	.02	.08	.03	-.02	-.01	-.02	-.03	-.13	.18	.06	.00	.07	.03	-.03
18	-.00	.13	-.04	.03	.03	.02	.04	.11	-.02	-.05	.03	-.12	-.03	.05	.07	-.02	-.01	.11
19		.72	-.45	.16	-.04	.11	.48	-.07	-.17	-.06	-.06	-.06	.29	.15	-.06	.46	.33	.19
20			-.42	.10	.01	.10	.54	-.06	-.12	-.04	-.11	-.01	.36	.11	-.11	.46	.39	.15
21				-.38	-.16	-.15	-.39	-.02	.10	.12	.11	.03	-.16	-.14	.14	-.36	-.25	-.01
22					.40	.16	.08	.05	-.01	-.06	.00	-.09	.01	.03	-.09	.05	.02	.07
23						.05	-.08	.04	.17	.06	.11	-.05	-.09	-.15	-.08	-.04	-.04	.06
24							-.00	-.13	.00	.10	-.04	-.04	.00	-.00	.00	.10	.05	-.14
25								-.05	-.19	-.15	-.06	-.08	.26	.09	-.04	.65	.62	.13
26									-.27	-.41	-.09	-.00	-.06	.00	-.00	-.04	-.02	.05
27										.78	.13	-.02	-.08	.01	-.03	-.21	-.21	-.02
28											.11	.04	-.04	.02	-.04	-.15	-.14	-.08
29												-.02	-.05	.07	.16	-.13	-.14	-.12
30													.00	-.01	-.05	-.08	-.03	-.05
31														.18	-.07	.24	.25	.02
32															-.12	.08	.04	-.11
33																-.12	-.14	.14
34																	.66	.05
35																		.01

TABLE 20

CORRELATION MATRIX FOR WHITES 36 VARIABLES

ROW/COLUMN	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	-.07	.01	.06	-.04	-.04	-.01	-.03	-.03	-.05	-.03	-.04	.01	-.02	-.03	-.05	-.01	.03
2		-.04	.05	.14	.02	.02	.06	.12	.07	.02	-.02	.05	-.07	-.06	-.01	-.04	.06
3			-.51	-.18	.07	.07	-.05	.07	-.11	.02	.01	-.04	-.05	.01	-.14	.04	-.04
4				.14	.02	-.01	.05	.01	.03	.00	-.04	.11	-.06	-.04	.04	-.04	.08
5					.10	.03	.05	.13	.03	.05	-.08	.10	-.18	-.09	.03	.03	.06
6						.60	.17	.04	-.02	.02	-.00	.03	-.04	-.06	.01	-.00	.01
7							.17	.04	-.02	.02	.00	.03	-.04	-.06	.01	-.00	.03
8								.07	.04	-.04	-.02	.06	-.07	-.04	-.02	-.01	.02
9									.03	.11	-.04	.01	-.26	-.17	-.18	-.03	-.15
10										-.03	.03	-.02	.09	-.01	.01	-.08	.08
11											-.01	.05	-.03	-.05	.07	-.02	-.10
12												-.23	.31	.20	.15	.03	-.08
13													-.36	-.21	.05	-.10	.11
14														.66	.25	.02	-.06
15															.21	.17	-.04
16																-.03	-.04
17																	-.06

ROW/COLUMN	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1	.06	.06	-.01	-.08	-.15	-.00	.09	.02	-.03	-.01	-.07	.04	.11	.07	.06	.05	.04	-.02
2	-.24	-.24	.18	-.08	-.06	.03	-.15	-.01	.04	-.02	.12	.06	-.14	-.07	.03	-.10	-.10	.02
3	.01	.01	-.05	.03	.01	-.02	.02	-.01	.07	.06	-.03	-.07	.01	.01	-.06	.11	.09	.01
4	-.13	-.06	.12	-.06	-.03	.12	-.04	.01	-.03	-.02	.11	.06	-.03	-.03	.06	-.09	-.05	.04
5	-.18	-.13	.18	-.13	.01	-.02	-.11	.04	-.01	-.05	.13	.04	-.10	-.03	.01	-.08	-.10	-.05
6	-.08	-.08	.05	.01	.05	-.04	-.01	-.05	.04	.01	.05	.09	-.03	-.03	-.04	.02	.00	.02
7	-.15	-.12	.05	-.01	.05	-.04	-.05	-.11	.08	.05	.05	.09	-.08	-.04	-.05	-.02	-.04	-.01
8	-.08	-.10	.06	-.05	.01	.03	-.04	.02	.03	.00	.03	.01	-.01	.04	-.02	.01	-.02	.03
9	-.25	-.22	.18	-.08	-.10	-.02	-.19	-.04	.10	.09	.11	.03	-.08	-.05	.07	-.18	-.21	-.05
10	-.04	-.06	.01	.07	.06	.02	-.01	.04	-.08	-.08	-.05	.05	-.05	-.07	.02	-.04	-.06	-.02
11	-.06	-.04	.03	.01	-.04	.05	-.00	-.01	.03	.05	-.00	.04	-.02	-.05	-.01	.03	.03	.01
12	.14	.11	-.14	.12	.05	.02	.14	.00	-.07	-.05	-.09	-.04	.05	.09	-.04	.15	.17	.07
13	-.16	-.14	.18	-.11	-.00	.01	-.12	-.03	.12	.09	.11	.08	-.10	-.07	.04	-.13	-.11	-.05
14	.38	.31	-.29	.26	.15	.09	.30	-.01	-.19	-.09	-.18	-.12	.16	.12	-.11	.35	.33	.16
15	.29	.25	-.23	.20	.16	.18	.25	-.03	-.12	-.02	-.11	-.69	.11	.06	-.08	.27	.26	.11
16	.17	.13	-.04	.10	.02	-.01	.10	-.07	-.06	-.01	.05	-.09	.04	-.03	.02	.19	.18	.15
17	.01	.05	.01	-.05	.02	.00	.02	-.03	-.01	-.01	.03	-.21	.00	.00	.00	.03	.02	-.04
18	-.03	-.03	.00	-.07	.04	.02	.01	-.04	-.04	-.04	.04	.03	.02	.05	-.06	.03	.02	.05
19		.83	-.54	.10	-.03	.07	.59	.06	-.26	-.15	-.22	-.14	.40	.25	-.23	.38	.40	.11
20			-.48	.07	-.02	.04	.60	.07	-.30	-.19	-.17	-.14	.39	.23	-.20	.37	.37	.09
21				-.27	-.10	-.09	-.50	-.04	.25	.11	.16	.11	-.27	-.25	.28	-.26	-.30	-.01
22					.36	.18	.06	.02	-.03	.08	-.09	-.08	.05	.09	-.04	.13	.11	.00
23						.16	.01	.01	-.02	.00	-.05	-.08	-.00	-.09	-.04	-.01	-.01	-.04
24							.02	-.00	.01	.04	-.00	-.14	.05	.02	-.09	.07	.09	.03
25								.08	-.34	-.22	-.21	-.14	.27	.18	-.20	.46	.51	.09
26									-.20	-.34	-.06	-.00	.10	-.01	.02	.01	.01	-.02
27										.59	.19	.03	-.10	-.06	.01	-.16	-.17	-.04
28											.10	-.04	-.11	.02	.03	-.10	-.09	-.04
29												.04	-.08	-.08	.08	-.11	-.12	-.02
30													-.02	-.01	-.04	-.10	-.11	-.04
31														.16	-.13	.20	.21	.05
32															-.29	.10	.13	.06
33																-.14	-.11	.03
34																	.75	.34
35																		.51

TABLE 21

TABLE 22

MEANS AND VARIANCES FOR GRADES TWO, FOUR, AND SIX

Grade Two		Grade Four		Grade Six	
$\overline{X}$	S.D.	$\overline{X}$	S.D.	$\overline{X}$	S.D.
1.47	.50	1.48	.49	1.52	.50
96.38	15.86	117.69	13.88	141.96	13.47
6.99	.95	7.05	.88	7.14	.76
.50	.38	.47	.39	.43	.36
1.37	.66	1.66	.85	1.92	.98
1.02	.15	1.02	.12	1.02	.12
1.00	.06	1.00	.06	1.01	.08
1.03	.19	1.02	.12	1.01	.12
1.29	.42	1.35	.44	1.48	.46
1.58	.40	1.78	.34	1.92	.21
.00	.03	.00	.04	.00	.04
.55	.50	.52	.50	.53	.50
.00	.05	.00	.05	.00	.05
.16	.37	.13	.34	.11	.31
1.82	.38	1.85	.35	1.87	.34
1.27	1.22	1.40	1.35	1.45	1.29
1.24	.43	1.22	.42	1.19	.39
4633.45	2106.17	5082.13	2313.74	5224.18	2368.28
1060.88	691.64	1130.43	667.56	1184.79	733.02
4.01	2.03	3.83	1.97	3.89	1.97
1.75	.85	1.79	.85	1.91	.88
2.25	.51	2.29	.52	2.29	.55
3.67	1.24	3.81	1.17	3.89	1.10
3.95	1.21	4.04	1.16	4.08	1.08
3.17	1.55	2.97	1.50	3.08	1.52
.89	.83	.80	.80	.73	.76
.43	.70	.45	.72	.41	.65
.33	.59	.28	.58	.31	.60
1.71	.71	1.74	.73	1.79	.75
1.93	.26	1.91	.28	1.91	.28
1.41	.64	1.28	.53	1.23	.48
39.97	74.08	35.47	75.97	25.67	58.96
3.25	4.14	2.52	3.86	2.57	3.84
6.38	2.70	6.39	2.72	6.36	2.95
1.84	.35	1.88	.32	1.88	.32
1.73	1.04	1.78	.98	1.80	.99
2.24	.77	1.98	.79	1.80	.82

TABLE 22 (Continued)

MEANS AND VARIANCES FOR GRADES TWO, FOUR, AND SIX

Grade Two		Grade Four		Grade Six	
X	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
2.62	.81	4.22	1.25	5.84	1.70
1.90	.54	3.52	1.04	5.03	1.63
9.18	2.32	10.37	2.32	9.83	2.31
N = 1037		N = 2729		N = 2149	

TABLE 23

MEANS AND VARIANCES FOR WHITES, NEGROES, AND SPANISH SURNAMED

White		Negro		Spanish Surnamed	
$\overline{X}$	S.D.	$\overline{X}$	S.D.	$\overline{X}$	S.D.
1.46	.50	1.49	.49	1.47	.50
117.82	11.88	117.29	13.77	118.75	18.28
7.05	.79	7.11	.95	6.84	.76
.43	.39	.47	.40	.57	.34
1.62	.85	1.70	.86	1.63	.83
1.01	.07	1.03	.16	1.00	.05
1.01	.07	1.00	.06	1.00	.00
1.01	.09	1.02	.15	1.01	.09
1.38	.45	1.33	.44	1.39	.46
1.84	.29	1.72	.37	1.89	.26
.00	.00	.00	.00	.00	.00
.00	.03	1.00	.00	.00	.00
.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	1.00	.00
1.95	.22	1.99	.11	1.10	.30
1.80	1.57	1.16	1.16	1.26	1.20
1.09	.28	1.27	.45	1.37	.48
6294.23	2420.60	4427.89	2008.67	4482.14	1901.82
1400.18	702.67	986.09	615.28	980.31	549.30
4.09	1.85	3.74	1.93	3.50	2.33
1.60	.81	1.95	.86	1.58	.79
2.15	.55	2.33	.49	2.45	.52
3.96	1.12	3.75	1.21	3.67	1.06
4.18	1.11	3.96	1.21	3.98	1.07
2.89	1.41	2.97	1.51	3.23	1.66
.87	.76	.78	.83	.68	.76
.38	.67	.51	.76	.40	.65
.27	.55	.29	.60	.26	.57
1.90	.73	1.68	.71	1.58	.69
1.94	.23	1.90	.29	1.84	.36
1.17	.40	1.34	.57	1.33	.56
19.07	54.88	44.67	84.88	42.08	79.32
1.70	3.37	2.74	3.95	3.81	4.27
5.87	2.32	6.69	2.89	6.58	2.79
1.90	.29	1.87	.33	1.85	.36

TABLE 23 (Continued)

MEANS AND VARIANCES FOR WHITES, NEGROES, AND SPANISH SURNAMED

White	S.D.	Negro	S.D.	Spanish Surnamed	S.D.
1.78	.98	1.86	.98	1.42	.96
2.02	.82	1.90	.77	2.16	.73
4.12	2.10	2.93	1.90	3.78	1.06
3.48	1.65	2.74	1.49	3.16	.97
10.72	2.72	10.20	2.51	10.33	1.76
N=935		N=1419		N = 363	

TABLE 24

GRADE TWO FACTOR PATTERN*

1	2	3	4	5	6	7	8	9	10	11	12
11	12	-15	-03	03	11	-01	-02	10	-05	20	05
-11	-02	00	11	08	04	-13	05	-04	-02	-16	-14
18	-05	12	-21	-48	03	13	13	18	10	-09	02
-32	00	-14	23	38	-06	-15	-14	-14	-13	12	01
-20	-03	-06	18	33	06	01	00	-13	-03	06	-06
-08	-07	01	14	04	01	34	15	-19	-07	03	-06
-04	01	-03	09	-01	09	50	05	-21	00	-03	-01
-08	-06	-12	04	05	11	44	-12	02	-02	-06	-04
-15	16	01	-03	-18	13	-04	14	-08	-19	03	-08
-02	05	14	05	-05	12	-03	11	-13	-16	-06	20
-02	-02	-02	-01	-05	-02	-02	-11	01	-03	-07	-02
04	-61	-17	-08	18	-14	10	-03	09	09	04	-10
07	04	10	-03	06	-02	01	-04	-01	04	-03	08
-26	87	-14	01	03	-17	03	00	02	06	-06	-07
26	-86	13	00	-05	18	-08	00	-01	-08	04	03
25	12	24	08	-09	12	-04	-19	-02	-03	01	-08
-28	-10	-29	00	13	-16	-07	25	-06	09	04	13
42	15	47	14	11	13	06	-39	-01	04	-03	15
39	14	62	33	25	01	07	11	12	01	05	02
10	-06	02	08	19	03	-07	-09	02	-15	-25	-10
20	-02	11	01	04	-06	-03	-05	18	08	-03	-28
-08	-05	-17	04	28	-14	08	-09	18	17	02	09

*Leading Decimals Omitted

TABLE 24 (Continued)

GRADE TWO FACTOR PATTERN*

1	2	3	4	5	6	7	8	9	10	11	12
78	11	-27	-16	15	-03	02	01	11	-17	-07	09
73	07	-31	-13	17	-05	02	09	08	-15	-11	08
-58	-10	01	17	12	22	-10	06	05	02	-16	00
21	-10	31	-15	-08	-41	-04	-03	-20	-01	-02	03
02	-15	24	-08	06	-42	00	00	-18	09	-23	05
08	-03	08	00	-10	-16	-09	01	-16	-16	-02	-08
67	08	-28	-01	18	10	-01	06	-10	15	-01	01
18	-08	-16	37	-07	-13	07	-01	14	-01	-04	04
-17	04	30	-55	32	12	04	02	00	02	02	-02
-20	10	25	-60	26	17	03	07	-03	04	05	01
-15	-12	-02	-06	28	-05	05	-02	07	05	-11	-10
-25	-06	-42	-24	-16	14	-02	-47	-14	04	-11	07
41	04	-10	-13	12	-10	05	04	-01	-17	00	01
37	03	-05	-07	-06	-08	03	-13	03	-15	16	-17
-27	-01	03	06	06	23	-03	13	16	-11	-22	08
67	08	-13	05	01	21	-10	11	-22	17	-03	-08
52	02	-04	10	01	23	-11	09	-16	26	-04	-06
-04	01	01	18	-02	-05	-01	-04	03	12	07	12
Eigenvalues											
4.17	2.11	1.75	1.35	1.20	.93	.72	.70	.55	.48	.39	.34
Cumulative Proportion of Total Variance											
.10	.16	.20	.23	.26	.29	.31	.32	.34	.35	.36	.37

*Leading Decimals Omitted

TABLE 25

GRADE FOUR FACTOR PATTERN*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
-07	00	-19	01	09	04	-08	-03	01	00	-06	09	-17	-10	11	00	-01	-02	01	-01	00
19	-03	07	-06	03	09	07	03	05	-04	-05	-05	09	14	08	-03	-01	-03	00	-05	01
-11	23	-08	12	-56	05	-13	15	-09	12	-02	04	03	04	03	-03	00	-02	00	00	00
23	-19	00	-12	54	-06	11	-05	06	-08	01	01	-05	-05	-04	-04	-08	02	-01	-02	-01
19	-01	02	-09	30	01	02	00	08	-08	-01	-04	11	06	03	-04	04	-04	-01	03	02
12	08	01	-06	05	05	01	04	23	30	-01	-10	00	-05	-03	01	-01	-02	-02	00	00
08	06	00	-04	-01	08	05	05	23	32	-07	-08	-03	-02	00	00	-05	-01	00	01	01
05	05	-03	-02	04	00	00	01	16	05	-10	02	05	01	08	-04	03	12	01	-02	00
19	04	-06	-08	-15	17	01	05	05	-16	-13	-13	04	02	00	-09	-03	06	01	-01	00
07	-17	08	-06	12	00	15	03	-05	02	-10	00	12	01	05	05	07	03	-02	05	-01
-01	-01	-01	-02	-02	00	02	02	02	-06	-11	-04	04	-05	05	01	01	-09	-08	-04	-01
16	58	-07	15	16	-20	-14	-02	07	04	18	05	01	01	01	-04	04	02	-01	-02	00
-06	-06	-02	01	01	07	-05	00	06	-03	08	03	17	-04	05	08	-15	-03	07	00	-02
20	-80	-20	17	-16	-06	-01	03	09	00	06	-02	-05	05	-03	-04	05	03	-02	-01	01
-18	79	20	-16	17	07	04	-01	-11	00	-07	-03	-02	02	-01	-01	02	03	-01	01	00
-28	-06	17	-06	-12	09	17	-14	06	-02	04	-03	-05	06	04	06	-09	03	-05	03	00
36	-05	-22	00	25	-12	-08	22	-09	10	-06	07	01	08	-08	-01	-01	-02	03	-01	00
-56	-17	46	-08	-05	08	25	-28	-02	10	02	11	03	-03	00	-04	05	-02	03	-03	00
-54	-22	66	-05	07	-01	-22	01	05	04	-06	07	02	00	-02	-06	02	-01	02	-03	00
-19	-04	12	-05	14	05	03	-04	-12	14	09	-07	-10	18	01	05	-01	00	-01	00	-01
-13	14	12	06	-08	00	-17	-11	18	-11	27	-09	01	00	02	-03	00	00	-01	01	00
08	-09	-08	11	09	-16	-04	03	-01	12	05	21	09	-01	-10	-03	00	-01	-05	04	00
-75	-05	-26	24	10	-09	-11	-19	-10	04	-08	-10	03	01	-02	-02	-02	-00	-01	-01	-01

*Leading Decimals Omitted

TABLE 25 (Continued)

GRADE FOUR FACTOR PATTERN*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
-71	-08	-29	21	13	-09	-13	-16	-10	07	-04	-15	07	-02	-02	-04	-01	-02	-01	01	01
56	-04	10	-19	03	25	-07	-02	-09	05	06	-05	-01	03	01	-10	01	-06	00	02	-01
-23	03	20	14	-08	-39	29	17	-03	-03	-06	-05	-07	00	03	03	-03	-01	00	00	00
-02	03	22	09	-03	-41	22	18	-04	03	10	-10	05	-03	-02	-04	00	01	02	01	00
-12	01	05	08	00	-18	09	10	07	-07	00	-07	-07	-01	12	-09	-01	-04	02	00	-01
70	-04	-23	02	16	10	01	13	00	04	04	02	05	-03	04	04	01	05	-01	-03	01
11	04	-09	-34	-07	-18	-05	-04	-01	-03	-04	02	00	00	-02	06	-04	-04	01	00	03
33	07	22	63	07	20	06	00	-02	-01	-02	00	01	00	-04	02	-03	-01	01	01	00
26	07	19	67	09	21	07	02	-03	-02	-04	03	-01	-03	-01	-01	-03	01	-02	00	00
24	-09	05	15	15	-01	-05	00	-06	06	06	-06	-01	11	12	09	04	00	02	-04	01
30	16	-48	-01	-09	09	48	-24	-03	06	07	03	03	-02	00	-03	03	-02	02	-03	00
-35	01	-15	12	07	00	-03	-12	05	-01	-06	-02	-05	04	05	-05	03	-02	07	06	00
-26	19	-13	12	-02	-03	01	-07	20	-09	-10	12	-08	13	02	01	-03	-02	-01	01	-01
28	-14	09	-12	03	11	-09	00	-23	06	03	-09	-06	-12	13	00	-02	03	00	00	01
-69	-02	-11	-04	08	29	12	29	00	-03	07	01	-01	00	00	-01	01	-02	00	01	00
-67	-01	-12	-04	09	29	12	29	03	-05	10	02	-02	-01	-01	-02	02	-02	00	00	00
-12	-04	-01	-10	-03	-04	06	00	-14	07	04	10	01	07	01	-13	-14	04	-02	00	01
Eigenvalues																				
4.66	1.96	1.60	1.37	1.07	.91	.74	.60	.41	.38	.27	.23	.16	.15	.11	.10	.09	.05	.03	.02	.00
Cumulative Proportion of Total Variance																				
.12	.17	.21	.24	.27	.29	.31	.32	.33	.34	.35	.36	.36	.36	.37	.37	.37	.37	.37	.37	.37

*Leading Decimals Omitted

TABLE 25

FACTOR PATTERN FOR SIXTH GRADE*

1	2	3	4	5	6	7	8	9
04	01	-09	08	-05	-03	09	05	01
-23	-06	00	-04	03	01	-04	-05	03
03	38	-13	00	25	34	-25	18	-05
-21	-30	07	-06	-30	-36	15	-16	05
-18	-09	09	01	-15	-17	04	-05	00
-16	06	00	-06	-09	-11	-19	-17	-40
-11	05	00	-03	-06	-03	-22	-15	-41
-07	02	-02	-03	00	-03	06	-05	-17
-17	08	-18	-11	22	02	-13	-01	01
-05	-01	-04	-06	03	01	-04	-01	00
00	-03	-02	02	00	00	-02	-03	04
-22	46	07	31	-29	02	07	09	-09
04	-05	00	01	07	00	-02	00	-03
-10	-76	-31	00	03	17	-08	05	-03
06	76	29	-01	-04	-21	06	-02	06
28	-04	15	-11	15	14	11	-15	-03
-36	-10	-18	13	-21	-22	-21	14	05
54	-16	34	-14	19	13	29	-27	-08
50	-25	58	-26	-03	05	-01	19	-11
13	-01	14	08	-07	-08	11	08	02
11	11	15	03	-04	18	05	06	-09
-14	-13	-03	12	-23	04	02	-04	-10
75	00	-19	30	-08	04	13	15	-09
71	-03	-22	28	-13	-01	10	13	-06
-56	-01	05	-20	09	-12	10	09	-05
28	-04	25	16	-19	21	-23	-21	18
03	-07	26	09	-25	17	-27	-22	14
12	00	12	12	-16	10	-19	-08	09
69	-05	-18	07	01	-23	-06	00	-03
03	03	-17	-23	-11	15	03	00	02
-30	-15	29	53	33	-08	-04	01	-03
-29	-15	29	55	36	-09	-06	01	-02
-19	-13	17	13	-08	-09	10	13	00
-27	19	44	20	15	03	22	-43	06
37	-06	-14	12	-02	06	06	02	00
28	09	-10	14	-06	09	07	-04	-07
-31	-04	10	-21	12	-15	03	13	07

*Leading Decimals Omitted

TABLE 26 (Continued)

FACTOR PATTERN FOR SIXTH GRADE*

1	2	3	4	5	6	7	8	9
64	02	-06	-04	15	-38	-19	-07	03
64	02	-08	-09	17	-36	-21	-07	06
12	19	-07	-26	05	03	-08	02	07
Eigenvalues								
4.44	1.91	1.55	1.37	1.01	1.00	.74	.66	.52
Cumulative Proportion of Total Variance								
.11	.15	.20	.23	.26	.28	.30	.32	.33

*Leading Decimals Omitted

TABLE 27

FACTOR PATTERN FOR NEGROES*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
-13	15	-11	13	-10	03	03	-05	-08	05	13	03	-05	10	06	04	05	-03
21	-01	-09	-05	02	00	-07	-10	02	06	-06	12	08	03	-13	-09	03	00
-14	21	53	-01	20	23	16	08	-07	-00	-06	06	01	-00	-03	03	00	00
25	-06	-55	04	-00	-23	-11	-06	05	-04	04	-11	02	-02	04	04	07	01
32	-05	-32	03	-06	-08	-05	-11	-09	-06	-08	03	05	02	-07	-03	-09	-03
06	01	-02	-06	-11	00	-00	-08	-23	11	-13	-08	03	-09	05	-02	-00	-03
10	05	00	-01	-06	03	00	-09	-29	14	-08	-10	06	-02	-01	-02	02	00
02	03	-01	-02	-04	-04	-00	-13	-14	-08	-04	08	08	07	05	-05	-00	03
19	18	20	-01	-01	05	-03	-12	14	-06	-14	08	09	03	03	05	08	02
15	-10	-19	02	05	-08	-04	04	-02	-02	-06	18	09	-05	02	06	-03	02
02	03	-00	-06	03	00	-01	-06	-01	-00	09	09	15	-08	01	-01	03	-05
-23	-11	11	-11	-02	-01	-25	-03	-01	11	13	01	10	-07	02	07	-02	04
32	22	-34	11	09	00	27	00	-07	-04	-03	02	-06	-05	-08	07	00	00
-40	-46	05	-19	-02	-06	-40	13	-14	-10	-06	04	-07	04	-04	-01	01	-02
-43	-65	-13	-34	-09	17	10	-03	-08	-10	-04	01	-00	03	-03	03	04	00
-13	-10	-11	-03	-11	01	-02	09	01	24	-00	10	-05	-04	-06	12	-00	00
-23	-15	22	-15	-13	05	-15	-14	21	12	01	-07	02	-03	01	-03	-05	-02
-04	-02	-14	09	17	08	01	14	-15	-11	11	-03	12	01	01	02	08	02
-79	05	-01	29	-20	-09	09	14	05	-01	-03	-02	09	-02	-03	00	03	00
-76	08	-07	27	-19	-07	10	18	04	02	-09	-06	09	-03	-03	-04	01	-00
59	01	-07	-10	-13	17	-09	10	03	09	-11	-04	02	04	-03	09	-01	-01
-26	-18	01	-01	48	-29	09	-05	-02	09	03	02	01	01	00	-00	02	-01

*Leading Decimals Omitted

TABLE 27 (Continued)

FACTOR PATTERN FOR NEGROES *

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
-05	-20	-01	-12	43	-29	10	10	06	06	-12	-04	00	-01	03	01	01	-01
-18	-02	03	-03	17	-15	04	-05	00	14	-03	-04	03	14	01	01	-02	04
-65	15	-18	15	-07	04	-03	-05	-01	04	-08	12	-09	-03	-10	-00	-00	-00
-14	26	-05	-29	-01	-04	03	01	-03	04	09	-05	-03	-04	-13	-09	04	04
26	-47	09	53	10	13	-04	-06	01	02	-00	-05	-02	-04	-04	-00	01	01
22	-43	08	57	13	16	-06	-07	00	-00	01	-03	01	-01	-01	-01	03	01
16	-18	-16	14	-03	02	06	11	-02	15	10	13	-01	04	-04	-08	01	-01
27	45	19	27	06	-24	-44	13	-08	-01	-03	03	-04	01	-02	-01	01	-00
-34	04	-01	19	-14	-08	01	-10	-04	01	-05	-03	02	16	-06	04	-04	-00
-27	08	19	12	-16	-14	03	-25	-06	-01	12	01	00	03	-05	08	00	-03
34	-02	-14	-04	04	20	01	20	03	11	05	-02	07	12	08	-05	03	-01
-44	19	-33	06	28	28	-17	-08	01	03	-00	03	-03	-03	02	-05	-01	01
-46	26	-33	00	24	31	-15	-11	04	03	-05	-05	-01	03	-02	01	01	-00
-12	19	-09	-11	25	11	-14	08	03	-07	04	-09	09	03	-06	07	03	-03

*Leading Decimals Omitted

TABLE 28

FACTOR PATTERN FOR SPANISH SURNAMED*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
01	-04	-21	02	-01	-35	02	-08	04	-06	-04	-03	-08	-06	10	-08	01	06	-01
-16	18	05	-05	-13	14	-05	-11	03	10	05	-01	02	-18	-07	06	-04	-13	-05
11	33	-03	26	-05	10	43	05	-06	-03	09	00	03	00	00	-09	-01	-04	-01
-25	-31	-08	-39	09	02	-32	-12	01	00	09	00	01	-01	08	-03	07	00	-01
12	-14	00	-04	02	-21	-31	01	-09	-07	-04	14	-15	01	-12	07	-09	-05	02
01	-01	04	-01	19	15	02	-04	25	-13	07	08	01	-04	13	10	00	00	-02
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
-06	07	-14	-12	01	-08	03	-04	18	-06	-13	-08	17	11	-08	03	02	-11	05
-18	-03	-05	-01	-17	06	-08	-04	01	-08	-29	-25	03	-06	02	-03	08	-04	-01
01	-12	06	-09	03	-07	02	03	-02	-14	03	19	09	13	-06	-11	06	-04	03
31	04	08	-02	-14	27	-19	08	03	10	-14	01	-09	16	-03	-06	-06	01	00
22	07	19	30	-14	09	-24	-04	01	-06	-04	-03	01	-05	06	-01	-02	-03	11
-27	-15	-26	-31	21	08	-01	-05	-08	14	00	00	06	-04	-06	-16	02	-02	-03
56	-20	46	09	-14	02	-20	13	01	-20	07	00	14	-06	-01	-10	-03	02	-05
46	-37	65	-20	-07	-07	10	-07	03	06	07	-05	06	-01	-07	01	-04	01	-03
20	-09	02	-10	00	29	00	18	12	04	05	05	-12	-06	10	-06	02	-04	07
20	-04	25	09	-13	-14	-05	13	05	-08	-03	-03	-10	-02	04	01	14	-04	-07
04	-12	05	-03	15	-15	14	03	-10	-17	-09	21	08	-04	11	00	-03	-13	01
68	14	-16	-20	21	-12	-02	22	04	05	01	-13	05	-08	-02	-03	-03	03	03
68	21	-20	-17	17	-13	-01	19	-04	-02	08	-05	04	-10	-07	08	03	01	04
-55	-10	02	-12	-33	09	15	05	-06	-07	09	04	-11	-11	-07	-04	02	00	04
23	07	17	28	49	10	-03	-07	02	11	-07	-01	-07	05	-01	-04	-02	-03	-04

*Leading Decimals Omitted

TABLE 28 (Continued)

FACTOR PATTERN FOR SPANISH SURNAMED*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
00	09	22	19	45	14	-07	-15	-04	-08	-02	03	-04	-07	-10	01	11	01	01
10	14	04	08	11	-34	-02	-15	16	-02	05	-06	-17	-03	-01	-12	-05	-07	01
71	11	-24	-20	-03	09	06	-16	-02	-07	-11	12	00	04	06	04	00	07	-02
00	-39	-14	30	06	-04	01	02	-32	-02	-15	00	05	-09	00	00	-02	06	02
-32	63	39	-18	05	02	-07	-01	-20	-07	-10	00	04	-01	03	01	01	01	-01
-26	71	30	-27	-02	-10	-08	-01	-08	-06	01	00	-01	02	04	-04	-03	05	01
-15	07	12	-08	06	08	04	08	23	05	-21	22	03	-14	-09	-05	02	08	03
-22	27	-54	24	-03	10	-29	16	09	-21	11	03	08	-01	-05	-05	-04	01	-07
39	13	-07	02	-15	-08	-02	26	-07	07	00	08	-11	06	-06	03	14	-03	-01
14	11	-03	02	-11	-11	-09	15	-02	31	-15	14	05	-05	09	-02	-03	-07	-05
-14	-13	00	-15	02	-02	21	12	15	-22	-22	-04	-11	00	-06	02	-07	03	-05
72	11	-17	-05	-16	07	01	-26	-03	-07	-06	-02	00	-03	-02	-05	00	-02	03
61	09	-22	-07	-19	09	00	-33	-07	-05	02	10	-07	-04	-04	00	02	-01	-04
11	-13	-04	-25	22	26	04	18	-20	-16	-01	-11	-12	01	04	-01	-05	-08	-01

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*Leading Decimals Omitted

TABLE 29

FACTOR PATTERN FOR WHITES*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
-05	-15	00	-06	11	-01	04	09	01	-10	24	03	-07	11	-00	01	07	-05	-01
23	06	-07	16	03	-07	-04	-01	-18	-01	-17	07	-04	-01	-08	04	04	02	01
-05	07	39	-31	-12	-39	-09	-10	00	-05	-06	06	01	06	-02	04	02	-01	-00
13	-06	-29	34	19	33	14	01	-06	06	18	-03	00	01	-02	05	-01	02	00
21	-05	-11	22	07	00	16	-04	-10	11	-15	-07	05	02	-05	-09	03	-08	-00
09	03	41	40	-26	-04	28	08	07	04	05	03	01	01	00	00	01	-01	00
13	07	43	36	-27	-03	26	10	07	-02	05	00	-03	01	-00	03	00	01	-00
09	00	09	19	-04	-01	14	-03	-11	-01	03	12	00	-09	07	-09	-03	03	00
31	00	04	-07	-00	-12	05	04	-20	30	-00	10	-07	-04	-04	02	02	-04	00
02	01	-16	13	-14	05	-10	-05	-02	-03	-06	09	-13	-13	-08	06	-03	-01	-00
04	01	07	03	07	-01	-05	-02	01	25	-06	-02	-10	17	00	00	-03	-00	00
-26	14	01	08	-10	01	-16	16	-09	09	-01	-05	03	-07	08	01	04	02	-02
28	-12	03	05	19	10	15	-24	17	-08	-11	05	-09	11	06	-02	-01	00	-00
-63	37	-10	18	-16	11	-26	29	-03	-09	-02	04	-01	09	-07	-02	-00	-00	01
-57	66	-21	02	02	-08	20	08	-04	-08	-02	04	-04	09	-03	-01	-00	-00	01
-22	15	-03	23	15	10	-05	08	21	05	-20	-01	-00	04	14	00	05	00	-01
-06	14	-03	-07	02	-14	16	07	-02	03	04	-18	16	-02	-06	-00	-04	-01	-01
02	-09	-02	13	05	07	07	-16	-04	-33	-05	02	01	-05	-06	04	03	-03	-00
-79	-24	04	-17	02	14	15	10	12	05	-10	13	00	-05	-03	-00	-03	-00	-01
-75	-29	00	-15	05	11	20	08	14	10	-07	05	06	-04	-07	03	-03	-03	00
60	10	-08	14	20	-16	-05	12	08	-03	00	08	06	03	-04	-05	-06	-04	01
-24	26	04	-00	-27	21	-19	-26	05	13	06	02	02	-02	07	02	04	-04	00

*Leading Decimals Omitted

TABLE 29 (Continued)

FACTOR PATTERN FOR WHITES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
-08	25	-03	06	-29	14	-06	-32	12	02	00	-04	09	-03	-05	-03	-02	-03	-00
-12	17	-04	03	01	16	04	-24	-11	08	07	11	01	08	-08	08	-04	02	-01
-69	-23	05	05	03	-03	11	-06	-00	04	02	-13	-14	-02	-06	-04	05	03	-00
-08	-19	-24	04	-13	-17	-01	-11	-01	06	06	10	10	07	05	-11	03	05	00
37	28	36	-20	22	25	-02	05	-01	-00	01	04	06	-01	-05	-09	02	04	00
23	34	37	-24	23	33	-01	04	01	02	04	-02	-07	-05	-02	-03	01	-02	00
27	06	04	08	15	04	09	-01	-00	05	-13	00	16	-00	-04	08	11	04	01
29	-53	21	18	-15	23	-41	13	-00	-02	-03	-00	05	07	-07	00	-02	-00	00
-38	-17	04	-08	01	08	07	02	-03	01	09	14	13	07	-02	-04	07	-01	-00
-26	-12	11	-10	-02	16	08	03	-31	-09	-02	-01	03	02	16	01	00	-05	00
25	09	-17	05	12	-16	-10	07	28	07	15	06	-02	-09	-00	03	05	-03	-00
-61	-00	26	26	29	-18	-17	-14	-05	02	03	-01	04	-01	-03	-04	01	02	00
-62	-02	23	25	31	-14	-16	-15	-04	02	07	-06	00	-02	-02	-01	01	01	00
-20	04	09	22	25	-08	-13	00	-03	-02	-01	13	04	-08	08	07	-06	-02	01

*Leading Decimals Omitted

TABLE 30

GRADE FOUR FACTOR PATTERN FOR LIST A*

1	2	3	4	5	6	7	8	9
-08	-09	22	03	14	-09	04	07	03
-14	61	17	00	-04	06	-02	02	02
27	-61	-04	06	05	-01	-06	-02	-01
08	05	01	02	07	07	-07	14	-06
18	16	07	12	16	03	-04	-12	-05
-30	04	-31	09	13	-03	-05	02	-03
38	-19	34	-03	-14	08	-05	02	00
-50	-04	-44	03	03	01	00	03	03
-69	-09	14	-14	-02	-09	00	-02	03
58	03	-08	15	16	15	06	02	05
01	01	-18	-09	-30	05	-08	-01	-03
-71	-19	21	-05	03	14	00	00	-02
-11	-02	07	35	-15	-10	07	03	-02
30	09	-10	-40	10	01	-04	-01	01
25	-09	00	-24	00	01	05	04	00
20	05	11	09	12	-06	-14	01	00
-26	05	13	-07	10	-21	-07	00	00
-65	-08	09	00	11	22	00	-01	-02
-13	-01	-02	16	-07	08	-14	00	09
Eigenvalues								
2.64	.89	.64	.46	.28	.19	.08	.05	.02
Cumulative Proporation of Total Variance								
.14	.19	.22	.24	.26	.27	.27	.28	.28

*Loading Decimals Omitted

TABLE 31

FACTOR PATTERN FOR NEGROES FOR LIST A*

1	2	3	4	5	6	7	8	9	10
-13	-23	22	08	-10	-03	-12	-01	-03	00
-12	-20	14	06	03	09	-14	00	-01	01
-14	-09	13	14	-02	-06	04	02	05	-03
-02	-08	18	06	06	-16	-01	-03	03	00
-11	-19	24	-07	02	09	00	08	03	01
02	-16	24	10	-06	-13	09	-05	-01	00
23	20	20	01	-11	15	10	-04	01	00
11	09	14	10	-07	15	07	12	-01	00
13	25	05	17	-19	03	00	-08	-02	00
11	-20	11	-16	15	-01	15	-04	-01	00
54	25	07	08	17	00	03	02	00	00
23	08	16	-32	-14	-04	-02	00	01	00
18	11	09	-19	-09	-12	-06	07	-03	-02
-16	-02	10	-17	09	17	-03	-10	-03	-01
30	18	18	09	20	-07	-06	01	-05	00
-24	-25	-02	06	01	09	10	02	-05	-02
64	-29	-06	-02	-02	10	-06	-02	03	-01
68	-28	-09	08	-03	03	-04	00	00	-01
26	-27	-10	-01	-09	-11	09	01	-04	01
Eigenvalues									
1.65	.37	.41	.31	.21	.19	.11	.05	.02	.00
Cumulative Proportion of Total Variance									
.09	.13	.15	.16	.17	.18	.19	.19	.19	.19

*Leading Decimals Omitted

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TABLE 32

FACTOR PATTERN FOR SPANISH SURNAMED PUPILS FOR LIST A*

1	2	3	4	5	6	7	8	9	10	11
-11	-21	15	04	-04	04	-17	03	-08	03	00
-11	01	-17	-01	13	02	-05	-20	-07	01	02
-03	15	06	-05	-24	-01	-05	06	01	06	04
-06	-09	-04	-21	05	00	-05	03	15	09	-01
00	15	-19	-08	08	10	03	-04	02	10	-01
32	08	19	20	07	05	-04	-14	09	04	-01
31	25	-15	16	-06	18	-06	04	-01	00	-02
23	28	22	07	-01	-05	-03	04	-01	04	02
17	12	-24	26	08	07	-08	11	00	-01	01
-01	21	-24	-22	-05	-03	01	02	-08	04	-01
59	-04	-07	-09	03	-26	-02	04	00	02	00
13	09	-04	15	-30	-16	07	-08	03	00	-01
07	-18	-31	07	-19	-10	-07	-07	03	-03	01
-19	-26	-02	08	02	-15	-15	01	-01	05	-02
40	-03	-08	10	28	-17	05	04	00	00	02
-15	23	-06	-14	05	02	-15	00	07	-08	01
76	-14	01	-13	-07	10	-02	00	02	-02	-01
69	-19	05	-13	-04	15	-02	-04	-05	00	01
12	36	15	-12	04	-16	-09	-06	-05	-03	-02
Eigenvalues										
1.96	.65	.45	.37	.31	.26	.12	.10	.06	.03	.01
Cumulative Proportion of Total Variance										
.10	.14	.16	.18	.20	.21	.22	.22	.23	.23	.23

*Leading Decimals Omitted

TABLE 33

FACTOR PATTERN FOR WHITES FOR LIST A*

1	2	3	4	5	6	7	8	9
-20	-28	03	14	00	11	01	-11	-04
-17	-22	-09	07	-17	10	13	-06	02
-04	-19	-03	06	-20	-15	05	14	02
-05	-20	-04	13	-15	-11	-04	14	-01
-07	-08	03	23	16	09	05	06	08
00	-07	11	-12	-05	-08	21	-13	00
42	11	26	09	-12	19	-06	04	-02
25	-10	15	-05	00	14	18	11	-05
05	10	02	-08	-26	16	-13	-03	03
00	-12	-16	21	09	01	-09	-03	-04
57	31	-18	03	-02	04	08	02	-01
20	11	35	12	08	-09	04	06	04
14	04	24	23	-04	-05	-02	-12	-03
-14	00	27	-11	-03	-17	-06	-02	-05
36	24	-19	09	-01	-07	06	02	-06
-19	-11	08	-20	12	12	-03	09	01
77	-25	-03	-04	00	-05	-04	-04	05
76	-22	-03	-07	03	-04	-04	-06	04
3-	-28	00	-07	09	04	-04	05	-09
Eigenvalues								
2.16	.62	.47	.31	.24	.22	.14	.13	.04
Cumulative Proportion of Total Variance								
.11	.15	.17	.19	.20	.21	.22	.23	.23

*Leading Decimals Omitted

TABLE 34

GRADE FOUR FACTOR PATTERN FOR LIST B *

1	2	3	4	5	6	7	8	9
18	-16	04	-10	09	07	00	08	-05
16	-15	00	-02	09	19	01	07	-02
10	-11	08	04	05	08	-04	-08	07
06	-04	-01	02	12	10	-10	-02	05
08	-10	-13	-24	04	11	06	-06	01
-15	-09	29	05	02	03	-10	-03	-03
-38	06	13	-18	-12	08	09	02	05
-20	-05	08	-13	-20	12	00	-04	-03
-11	10	22	15	-05	06	07	08	06
10	11	-25	-08	05	04	-02	04	05
-59	20	-14	10	-05	08	01	-01	-01
-18	21	13	-28	07	-05	-04	-03	-01
-13	19	08	-17	15	-02	-03	04	01
19	08	04	-03	12	-03	13	-01	-04
-35	18	-09	13	02	15	-01	-02	05
25	-14	-07	-07	-17	-03	05	00	01
-78	-21	-05	-03	07	-05	02	01	00
-76	-22	-04	01	09	-07	02	01	01
-11	-01	-08	-11	-18	-03	-16	07	-01
Eigenvalues								
2.14	.38	.32	.30	.21	.14	.09	.04	.03
Cumulative Proportion of Total Variance								
.11	.13	.15	.16	.18	.18	.19	.19	.19

*Leading Decimals Omitted

TABLE 35

FACTOR PATTERN FOR NEGROES FOR LIST B*

1	2	3	4	5	6	7	8
15	-08	23	-15	-15	-06	-07	-01
20	63	08	-07	12	-08	-03	01
-31	-56	13	10	-13	-01	07	06
-06	08	12	03	-08	-17	-16	11
-16	29	11	-01	-13	-01	18	-02
24	02	-19	18	-17	-10	-05	03
-35	-12	41	-12	17	-01	-02	07
35	-12	-40	20	-04	-11	-03	00
70	-11	03	-17	-04	03	02	02
-60	07	03	07	-09	-13	-04	-12
00	-05	-16	15	27	04	07	13
65	-20	19	-12	02	-07	05	-07
13	06	26	25	-03	11	-17	02
-23	-04	-29	-28	04	-19	04	07
-16	-19	-09	-18	08	-11	-13	01
-15	15	13	04	-19	-11	12	05
29	09	03	-14	-19	08	00	15
41	-15	23	09	14	-21	04	-06
13	06	19	28	08	-14	08	07
Eigenvalues							
2.15	1.00	.80	.48	.32	.23	.15	.10
Cumulative Proportion of Total Variance							
.11	.17	.21	.23	.25	.26	.27	.27

*Leading Decimals Omitted

TABLE 36

FACTOR PATTERN FOR SPANISH SURNAMED PUPILS FOR LIST B*

1	2	3	4	5	6	7	8	9	10
03	-14	-11	23	06	-11	05	-03	08	-04
15	38	-36	02	-22	02	-02	02	-03	01
-30	-51	23	-09	11	06	04	-04	04	01
00	00	00	00	00	00	00	00	00	00
-16	-03	08	12	05	12	20	00	-15	-04
25	29	29	10	05	04	14	-02	-05	03
-30	-44	-16	-13	-05	-07	06	06	-08	02
47	11	40	-01	01	04	-12	00	-03	01
63	-20	-11	-13	02	-11	-07	-07	-09	01
-56	04	-07	11	-03	27	-07	09	-03	01
-01	16	17	-30	-18	-19	15	06	06	-01
70	-21	-16	-06	05	12	07	08	06	-01
-01	-10	16	30	-24	-17	03	10	-08	-01
-23	32	-06	-35	11	07	08	-07	-04	-03
-14	09	-02	-18	22	-09	01	20	-03	02
-12	00	-18	13	-01	-05	18	-11	00	05
15	02	-11	08	27	-13	-07	00	-15	-01
73	-09	-07	04	01	18	13	07	02	00
08	-26	04	-22	-28	11	-04	-05	-11	00
Eigenvalues									
2.37	1.02	.63	.55	.37	.28	.18	.11	.10	.01
Cumulative Proportion of Total Variance									
.12	.18	.21	.24	.26	.27	.28	.29	.29	.30

*Leading Decimals Omitted

TABLE 37

FACTOR PATTERN FOR WHITES FOR LIST B*

1	2	3	4	5	6	7	8	9
-05	07	-19	10	15	-02	16	-05	07
-06	-63	-09	05	-01	-06	02	02	00
16	61	06	08	00	04	-03	05	02
11	-10	08	07	-06	13	15	18	00
30	-11	-05	03	18	-02	-16	15	02
-28	-03	29	-05	15	02	-01	07	-01
31	08	-27	11	-24	04	03	-03	-03
-57	04	38	-05	03	02	06	-06	01
-73	04	-18	00	01	09	-04	-07	00
62	02	14	14	04	-19	05	-06	03
-06	-04	21	-22	-29	03	01	03	-01
-71	08	-21	05	-08	00	-01	12	05
-09	09	-12	-14	01	-28	-03	01	-05
37	-17	10	15	-02	23	-02	-10	02
31	02	03	14	-05	10	-14	05	-01
19	08	-04	05	08	03	18	08	-08
-27	02	-11	04	18	17	-02	-04	-07
-55	-06	07	36	-09	-10	00	03	01
-19	03	16	36	-03	-10	-05	-02	-05
Eigenvalues								
2.76	.86	.57	.44	.29	.26	.14	.11	.02
Cumulative Proportion of Total Variance								
.15	.19	.22	.24	.26	.27	.28	.29	.29

*Leading Decimals Omitted

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Technical Report No. 16

I. Purpose

Factor analysis was performed on the school variables to ascertain the underlying dimensions of these variables, thus obtaining a more parsimonious description of the school data.

II. Data

(i) Schools Sampled

From the total of 2,920 schools initially sampled for the Compensatory Education Evaluation 1968-69 a stratified random sample of 290 schools was obtained. Technical Report No. 6, pp. 4-5, includes the procedure followed for selecting this stratified sample. Table I presents a summary of the number of schools sampled.

Table I

Summary of Schools Sampled

Compensatory Education Evaluation 1968-69

	Strata				
	1	2	3	4	Total
Initial Sample	1454	876	438	152	2920
Stratified Sample	16	52	90	132	290

(ii) Input Variables

The data from the Principal Questionnaire was transformed into measures of school variables suitable for metric analysis. Technical Report No. 3 provides a summary of the procedures followed, and includes a description and scoring for each variable. School variables labelled 300-310, 312, 314-336, and 340-360, together with Stratum level were initially selected for factor analysis.

III. Method

Factor extraction was accomplished by a principal axis procedure.

Squared multiple correlations were used as estimates of the communalities. (a)

An oblique rotation was performed using the Harris-Kaiser Independent Clusters solution. The factors to be rotated were selected using the Scree Test.

IV. Results

The initial set of correlational data revealed several variables for which there was very little data necessitating that they be deleted from further analysis. The reason for the high omission rate is attributable to lack of responses on the Principal Questionnaire as recorded on the item tapes and/or deletion of data that was outside the logical minimum and maximum values possible for each variable. Table II includes the final tally of the data for each variable. Variables 300-310, 312, 332-336, and 340-360, together with Stratum level were retained for further analyses. The intercorrelations among the retained variables are presented in Table VI, Appendix A. Four rows of the Table VI are equivalent to one row of the original correlation matrix of returned variables. For example, the correlation between Strata and variable 302 is .09264, and the correlation between variables 309 and 357 is .05468. The means and standard deviations are presented in Table III.

(a) The Biomedical computer programs BMD 03D-Correlation With Item Deletion-and BMD 03M-General Factor Analysis-were used for this computation.

Table II
Summary of Input Data for
Factor Analysis of School Variables

Variable No.	Total No. of Responses	Variable No.	Total No. of Responses	Variable No.	Total No. of Responses
Strata*	290	320	65	342*	290
300*	284	321	70	343*	290
301*	255	322	65	344*	290
302*	274	323	26	345*	290
303*	223	324	32	346*	290
304*	138	325	28	347*	290
305*	263	326	43	348*	290
306*	290	327	51	349*	290
307*	287	328	48	350*	290
308*	285	329	27	351*	290
309*	282	330	29	352*	285
310*	278	331	30	353*	275
312*	282	332	243	354*	277
314*	54	333*	282	355*	244
315	59	334*	233	356*	247
316	58	335*	236	357*	248
317	167	336*	287	358*	231
318	187	340*	290	259*	235
319	152	341*	290	360*	176

* Retained for further analyses

Table III

Means and Standard Deviations of School Variables

Compensatory Education Evaluation 1968-69

Strata	300	301	302	303	304	305	306	307	308
3.1655	447.8979	62.4627	.9332	.3270	.9722	.1665	1.3552	4.7596	.0204
.9114	252.8381	39.2523	.1088	.3323	.1016	.1662	.4794	1.6624	.0594
290	284	255	274	223	138	263	290	287	285

309	310	312	332	333	334	335	336	340	341
.1735	.1204	3.1454	1.1934	2.0571	1.1931	1.6356	2.8397	1.1276	1.6207
.1383	.1393	2.4502	.4161	1.9682	.3956	1.0572	1.6092	.3342	.4861
282	278	282	243	282	233	236	287	290	290

342	343	344	345	346	347	348	349	350	351
1.4655	1.2379	1.7690	1.0414	1.0138	1.2897	1.5828	1.1483	1.6000	1.0448
.4997	.4266	.4222	.1995	.1168	.4544	.4940	.3560	.4907	.2073
290	290	290	290	290	290	290	290	290	290

352	353	354	355	356	357	358	359	360
1.8000	1.4218	.5146	.9316	63.6640	63.9234	64.0043	3.0085	36.3239
.4007	.4948	.4021	.1970	3.4706	3.1824	3.0836	1.0978	22.5896
285	275	277	244	247	248	231	235	176

The principal axis factor extraction yielded twenty-two factors (corresponding to the positive eigenvalues of the intercorrelation matrix of variables with SMC's along the diagonal) which accounted for 45.1 percent of the total variance.

Using the Scree Test (Fig. 1) the first ten factors (which accounted for 38.3 percent of the total variance) were retained for rotation. The results of the oblique rotation (Harris-Kaiser Independent Clusters solution) of the ten factors are summarized in Table IV. The intercorrelation matrix of factors is included in Table V.

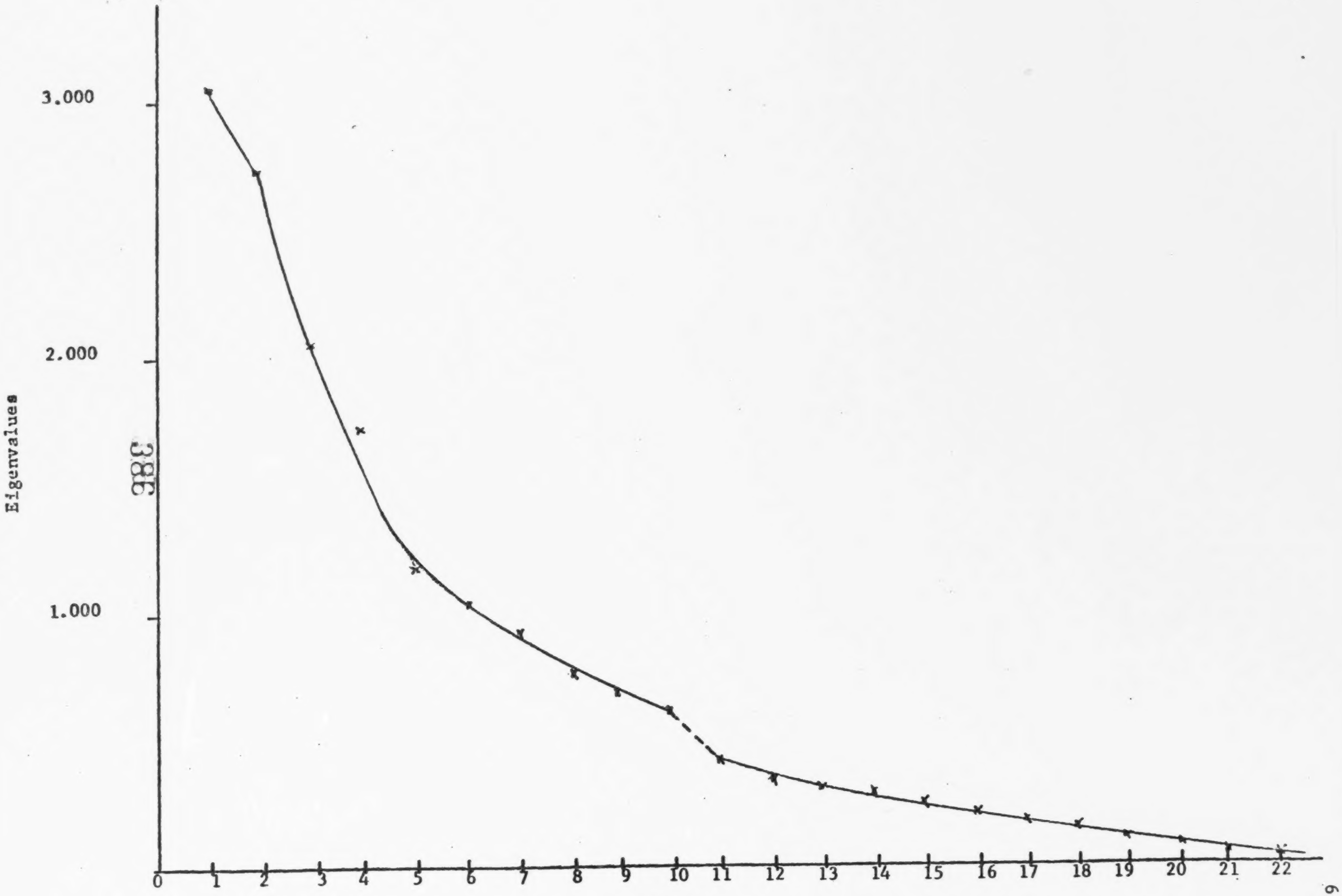

Fig. I

Graph of Eigenvalues Against Number of Eigenvalues

Table IV

Factor Pattern*for Factor Analysis of School Variables

(Harris-Kaiser (Independent Clusters) Oblique Solution) Factor

Variable	1	2	3	4	5	6	7	8	9	10
Strata	-216				-561					
300				859						
301				808						
302	154		-137	-101	-172		166		-294	
303	225		280			151			543	
304			-155	104	-197	187			278	-343
305				-117	151	446	-182	-132		
306	129			265		122		-145	-119	
307				-174	333	-111			-203	-102
308	-120			-228						-124
309			132	111	-186		-167	277	-275	
310	318			-173	-188	303	-122	163		123
312				105	651	115				
332	-151		-186	-146	129	492	136	107		-119
333	677			162	111				115	
334	-239			143	172	410	122		188	
335	140	113	-104			484				172
336	462					162	-111			
340	-166		136	190	-118		-351		155	322
341			138				409			
342							591			
343			639			-181	143		113	
344	137					115	518		-108	
345			126					506		
346			-104							584
347			434	-101		229	101		-166	
348			177	181		120			-455	
349			754							
350			232			292			-317	
351								575		
352	-261			127		114	280		263	138
353			148			251		198		
354				162	-408	274				-180
355			126		-192					

Table IV (con't)

Variable	1	2	3	4	5	6	7	8	9	10
356		865								
357		878								
358		806								
359	807				104					
360	769				-130					
Variance of Oblique Factors	2.430	2.260	1.577	1.877	1.353	1.455	1.233	.872	1.130	.757

* Factor loadings whose absolute value is less than or equal to .1 have not been entered in the table

Table V

Correlations* Between Oblique Factors for School Variables

Factor	1	2	3	4	5	6	7	8	9	10
1		-050	009	085	240	174	-106	037	404	-109
2			088	161	103	067	-001	-005	-049	035
3				011	111	217	349	-004	-189	116
4					198	218	-018	198	-014	008
5						244	-002	-028	-032	095
6							090	081	-084	011
7								-067	-241	050
8									045	-048
9										-139
10										

*Leading decimal points are omitted

VI. Identification and Interpretation of Factors

1. Factor 1. The principal loadings on factor 1 are from the following variables:

V333--Percent of school Negro

V336--Percent of pupils in school with families on welfare

V359--Percent of families whose head of household did not complete eighth grade.

V360--Percent of pupils more than one grade level below national norm in achievement

This factor appears to be a measure of socio-economic deficit and educational deficit of both the head of the household and the children of the household. The significant loading of V333--Percent of school Negro--on this factor together with relatively high first order correlations between V333 and the remaining three variables indicates that socio-economic and education deficit are more prevalent in areas with a higher concentration of Negros. This factor will be named socio-economic and educational deficit.

2. Factor 2. This factor, named age of reading text, received its highest loadings from the following three variables:

V356--Copyright date of Grade 2 reading text

V357--Copyright date of Grade 4 reading text

V358--Copyright date of Grade 6 reading text

3. Factor 3. The highest loadings on factor 3 are from the following variables:

V343--Assignment of teachers to regular programs (Years of Teacher Experience)

V347--Assignment of teachers to Academically disadvantaged Programs (Teacher Preference)

V349--Assignment to Academically Disadvantaged Programs (Years of Teacher Experience)

This factor measures the policy of assigning teachers by experience. The remaining assignment variables did not load on this factor. Hence, this factor is named teacher assignment by experience.

4. Factor 4. Factor four is named age of school, in accord with the following two variables which have the largest loadings:

V330--Average Daily Membership: Total School Size

V301--Average Daily Membership: Grade Two

5. Factor 5. This factor is a "doublet" with high loadings from two variables:

Strata--School District Size (population)

V312--Urbanism of School Location

These variables load in opposite directions which is to be expected since the lower stratum numbers correspond to the school districts with larger pupil populations. Consequently this factor will be named urbanism of school.

6. Factor 6. This factor has its principal loadings from the following variables:

V305--Stability of school population

V332--Percent of school American Indian

V334--Percent of school Oriental

V335--Percent of school Spanish sur-named

This factor measures the proportion of students belonging to minority groups other than Negros. The high loading of V305--"Stability of school population" is suggestive, taking into account the scoring of this variable, of a degree of mobility. This factor is named school non-Negro minority composition.

7. Factor 7. This factor has its principal loadings from the following variables:

V340--Assignment of Teachers to Regular Programs (Random)

V341--Assignment of Teachers to Regular Programs (Teacher Preference)

V342--Assignment of Teachers to Regular Programs (Special Teacher Training)

V344--Assignment of Teachers to Regular Programs (Qualification of Teacher)

This factor measures the extent to which teachers are assigned to regular programs on the basis of their competencies, as reflected by specialized training or qualifications, or on the basis of their stated preferences. Although V340--"Assignment of Teacher to Regular Programs (Random)" has a high loading, it loads in the opposite direction and possesses the lowest pattern coefficient when compared to the remaining three variables. Unlike factor 3 (and 9 and 10 which follow), this factor refers only to the assignment of regular teachers. Factor 7 is named teacher assignment to regular programs by specialized teacher training, qualification, or stated teacher preference.

8. Factor 8. Factor 8 is a teacher assignment factor with the following two variables possessing high loadings on it:

V345--Assignment of Teachers to Regular Programs (Other)

V351--Assignment of Teacher to Academically Disadvantaged Programs (Other)

This factor reflects the policy assigning teachers to either regular or academically disadvantaged programs by means other than stated teacher preference, specialized teacher training, years of teaching experience, qualification of teacher, or random assignment. No specific data was received to reveal the nature of what other assignment may involve. Consequently no name has been attached to this factor.

9. Factor 9. The principal loadings on factor 9 are from the following variables:

V303--Public School Participants in Disadvantaged Program as a Percent of Average Daily Membership

V348--Assignment of Teachers to Academically Disadvantaged Programs (Special Teacher Training)

V350--Assignment of Teachers to Academically Disadvantaged Programs (Qualification of Teacher)

This factor measures the percent of school participation in Compensatory Education Programs. The loadings of V348 and 350, in opposite directions to V303, suggest that the smaller the school participation in Compensatory programs, the more likely that assignment of teachers to academically disadvantaged programs is by specialized training or qualification. This factor is named percent of school participation in Programs for the Academically Disadvantaged in accordance with the highest (in absolute value) loading on it.

10. Factor 10. The following three variables have high loadings on this factor:

V304--Public School participants in Disadvantaged Programs as a Percent of all Participants in Disadvantaged Programs

V340--Assignment of Teachers to Regular Programs (Random)

V345--Assignment of Teachers to Academically Disadvantaged Programs (Random)

Factor 10 is similar to factor 9 in that both have assignment variables and a participation variable with significant loadings. Factor 10 differs from factor 9 in that the highest loading corresponds to an assignment variable. Thus factor 10 is named teacher assignment by randomization.

Factors 1 and 9 have a substantial positive correlation, .40. This correlation, coupled with the positive correlation (.24) for factors 1 and 5 indicates that the greatest percentage of school participants in academically disadvantaged programs is most likely to be found in urban areas in which there is a socio-economic and educational deficit.

The positive correlations between factors 5 and 6 (.24), 1 and 6 (.17), 4 and 5 (.20) and 4 and 6 (.22) reveal that there is a larger percentage of "minority" students in the larger, more populated schools which are likely to be found in urban centers.

The correlation (.22) between factors 3 and 6 suggests that in those schools in which the non-Negro minority composition in relatively high, teachers are more likely to be assigned to teaching programs on the basis of their experience.

Factor 9 correlates negatively with both factor 3 (-.19) and factor 7 (-.24). Inspection of the variables involved and the particular configuration of pattern coefficients, coupled with the first order correlations between the respective variables, reveals no systematic relationship between teacher assignment to regular or academically disadvantaged teaching programs.

Appendix A

Table VI

Correlations Among School Variables

Compensatory Education Evaluation 1968-69

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```
1.00000 -.17607 -.18848  .09264 -.17032  .04884 -.19869 -.08542 -.09726  .12742
 .11488 -.08849 -.50717 -.17521 -.36898 -.20025 -.16263 -.14184  .05539 -.07643
 .01959  .07514  .01270  .00026 -.02151 -.08275 -.06804 -.14524 -.07582 -.08041
 .01997  .0119   .12078  .05081 -.00483  .00605  .03517 -.37739 -.19550

-.17607 1.00000  .78043 -.07261 -.08875  .08030 -.03675  .23197 -.05088 -.10684
 .14[illegible] -.[illegible] .0[illegible] -.07[illegible]  .15447  .10270  .15539  .02162  .10129  .03779
 .[illegible] -.[illegible] -.01916  .12714 -.05034 -.04184  .13224 -.07050  .06257  .09551
 .[illegible] -.[illegible]  .13014  .1700[illegible]  .14677  .10041  .02531  .02180 -.00095

-.18848  .78043 1.00000 -.06430  .03027  .11784  .01231  .17251 -.00010 -.17348
 .07423 -.46035  .07440  .10556  .10441  .19110  .10403  .05542  .14722  .04296
 .09440 -.[illegible] -.08550  .10055 -.05547 -.04278  .11624 -.05006  .04198  .11319
-.01061  .01589  .09019 -.02474  .08199  .17200  .09406  .09346  .07926

 .09264 -.07261 -.06430 1.00000 -.13647 -.04498 -.01544 -.02179 -.03459 -.08145
 .04156  .00796 -.12770  .09793 -.05534 -.12378 -.02816 -.01698 -.15637  .02025
 .11256 -.01183  .11095 -.00954 -.01764  .08035  .01746  .02947  .05876  .03184
-.03657  .06001  .18886 -.03153 -.07570 -.08512 -.07636  .01143 -.05191

-.17032 -.08875  .03027 -.13647 1.00000  .16050  .08563  .05807 -.08251 -.01250
-.15781  .15405  .04432  .06230  .43334  .08867  .06291  .24203  .06271 -.10396
-.08577  .13749 -.02160  .07265 -.05992 -.03238 -.25867  .21855 -.08775 -.01738
-.07679  .14980  .08028 -.06058  .05915  .03657 -.00181  .38549  .32760

 .04884  .08030  .11784 -.04498  .16050 1.00000 -.03194 -.04150 -.21955  .03567
-.08782  .11061 -.00112  .11063  .13723 -.07546  .02060  .08544 -.00832 -.02526
-.07204 -.18086 -.04709  .04094 -.20213 -.16305 -.09098 -.14614 -.11366  .03782
 .14647  .11260  .16400  .00961 -.00020 -.03193 -.01169  .09743  .13375

-.19869 -.03675  .01231 -.01544  .08563 -.03194 1.00000  .11880  .02651  .02675
 .01011  .06485  .19666  .22179 -.03511  .11120  .34027  .15090  .00254 -.14182
-.09064  .01274  .01680 -.02214 -.02171  .12608  .03812  .10698  .13720 -.06541
-.13138  .02179  .13059  .01137 -.01598 -.01079 -.02925  .06374  .03083

-.08542  .23197  .17251 -.02179  .05807 -.04150  .11880 1.00000 -.00648 -.07822
 .18409 -.02149  .05539 -.02201  .14224  .12228  .11867  .09221  .09324  .01587
-.02814 -.05551  .08220  .02670 -.02599  .00263  .17500 -.00552  .04707 -.05631
 .07367  .07626  .17127  .01116  .10091  .06842  .15608  .04361  .09666

-.09726 -.05088 -.00010 -.03459 -.08251 -.21955  .02651 -.00648 1.00000  .12522
-.02912 -.03188  .10352  .01442 -.04314 -.00931 -.05359  .04532 -.09463 -.04949
-.02118  .01164  .00162 -.10411 -.03651  .04610 -.02242  .05493  .03150 -.10913
-.10443 -.10440 -.06484 -.04873  .00246  .02783  .04190  .00573 -.03404

 .12742 -.10684 -.17348 -.08145 -.01250  .03567  .02675 -.07822  .12522 1.00000
-.07288 -.14884 -.02102 -.01410 -.08387  .00749 -.08038  .01397 -.08809  .0557[illegible]
 .04652  .01119  .02029 -.01827 -.01598  .00190 -.03168 -.02349 -.00882 -.0724[illegible]
-.[illegible] -.[illegible] -.[illegible]  .02416 -.01267  .14671  .03641 -.08960 -.06075

 .11488  .14[illegible]  .07423  .04156 -.15781 -.08782  .01011  .18409 -.02912 -.07288
1.00000  .[illegible]  .[illegible]  .[illegible] -.14673  .00012  .07922 -.09550  .00347  .01105
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-.[illegible]  .[illegible]  .[illegible]  .15[illegible]  .1[illegible]  .07448  .1[illegible] -.15794 -.07674

-.08849 -.[illegible] -.46035  .00796  .15405  .11061  .05465 -.02143 -.02188 -.04884
 .[illegible] 1.00000 -.[illegible]  .[illegible]  .15[illegible]  .05046  .15[illegible]  .10480  .05094 -.10[illegible]
-.1[illegible]  .[illegible]  .[illegible]  .[illegible]  .11343  .02036  .0755[illegible]  .02709  .00936  .15747
-.[illegible]  .[illegible]  .[illegible] -.[illegible]  .08[illegible] -.0[illegible] -.04758  .23735  .24707
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-.52717  .2[illegible]  .27448 -.12759  .04692 -.00112  .18666  .09338  .18342 -.02102
 .14958 -.37[illegible] 1.00000  .14209  .19444  .22595  .17094  .07760  .04243 -.09591
 .03471 -.01959  .00104  .13356 -.01999  .09522  .10009  .04942  .12232  .05477
-.[illegible] -.01578 -.15432 -.[illegible]  .14002  .15909  .15674  .14154 -.00624

-.[illegible] -.03414  .0554[illegible]  .[illegible]  .04[illegible]  .11549  .02172 -.02201  .01442 -.01411
 .[illegible]  .[illegible]  .14[illegible] 1.00000  .02316  .27966  .15185  .06060 -.05475 -.01617
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 .[illegible]  .[illegible]  .[illegible] -.[illegible] -.[illegible] -.[illegible] -.05441  .01596 -.09963

-.34159  .14427  .12411 -.15554  .43851  .12722 -.02511  .14224 -.04314 -.08397
-.14471  .17527  .17464  .03764 1.00000  .01738  .10671  .34292 -.08427 -.07544
-.01241  .14731 -.05760  .04235 -.04622 -.09770 -.08280 -.03251 -.02099  .03794
-.09485  .01373 -.05701 -.11464 -.02869 -.05872 -.04597  .61023  .52912

-.20125  .12192  .18160 -.12379  .08847 -.07546  .11120  .12228 -.00931  .10045
 .02912  .15566  .20555  .27864  .00755 1.00000  .21998 -.00679  .03774  .08319
 .04001  .09104  .12782  .07110  .01904  .09112  .12019  .15224  .17144  .05793
 .16962  .00417  .08371  .03254 -.01696  .04557 -.04963 -.02954 -.04927

-.16263  .15531  .19603 -.02318  .06291  .02060  .34027  .11967 -.05353 -.08039
 .07259  .16000  .17036  .13185  .10670  .21998 1.00000  .22330  .07952  .06522
-.00787 -.14024  .02332  .04251  .07647  .11547  .01299 -.00399  .12725  .09279
 .02275  .16118  .02178 -.07368  .10440  .12981  .12502  .21130  .16129

-.14184  .02162  .05542 -.01489  .24803  .08544  .15030  .09221  .04522  .01397
-.08560  .10699  .05760  .06060  .34292 -.00679  .22330 1.00000 -.00692 -.05635
-.10587  .03619  .01159 -.03334 -.06215  .04451 -.12361 -.00066  .04158  .01130
-.12397  .04413 -.03062 -.00899  .03541  .02284  .03319  .47036  .33607

 .05539  .10129  .14722 -.15637  .06221 -.00932  .00254  .08334 -.09463 -.08898
 .05347  .05936  .04243 -.05475 -.08427  .03774  .07952 -.00692 1.00000 -.06317
-.19113 -.[illegible] -.23177 -.02764  .22040  .00444  .05110  .01494 -.04641 -.03295
 .15684 -.[illegible] -.04109  .03635  .07265  .05766  .11914 -.06271 -.10773

-.07649  .01779  .04266  .02025 -.00396 -.02526 -.04182  .01597 -.04848  .05570
 .01123 -.10[illegible]  .08504 -.01617 -.07544  .08319  .06522 -.05635 -.06317 1.00000
 .27365  .27619  .27966 -.05162  .03162  .27995  .14561  .10620  .10155 -.03671
 .08144 -.[illegible] -.05[illegible]  .06425  .00591  .04979  .04728 -.08077 -.02742

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Technical Report No. 17

I. Purpose

Factor analysis was performed on the teacher variables to determine the underlying dimensions of the variables, thus obtaining a more parsimonious description of the teacher data.

II. Data

(i) Teachers Sample

From the total of 22,067 teachers initially sampled for the Compensatory Education Evaluation 1968-69 a stratified random sample of 1016 teachers was obtained. Technical Report No. 6, pp. 2-4, summarizes the procedure followed for selecting this stratified sample. Table I presents a summary of the number of teachers sampled.

Table I

Summary of Teachers Sampled

Compensatory Education Evaluation 1968-69

	Strata				
	1	2	3	4	Total
Initial Sample	12683	5911	2636	837	22067
Stratified Sample	142	228	295	351	1016

(ii) Input Variables

The data from the Teacher Questionnaire was transformed into measures of teacher variables suitable for metric analysis. Technical Report No. 3 provides a summary of the procedure followed, and includes a description and scoring for each variable. Teacher variables labelled 200-205, 207, 209-211, 216-228, and 233-237 together with Stratum level, were selected for the factor analysis. The remaining variables were in a form not suitable for factor analysis.

III. Method

Factor extraction was accomplished by a principal axis procedure. Squared multiple correlations were used as estimates of the communalities. (a)

(a) The Biomedical computer programs BMD03D-Correlation With Item Deletion-and BMD03M-General Factor Analysis-were used for this computation.

An oblique rotation was performed using the Harris-Kaiser Independent Clusters solution. The factors to be rotated were selected using the Scree Test.

IV. Results

The results of the correlational analysis are summarized in Table II. Although there were eight variables for which there was a relatively high incidence of missing data (attributable to lack of responses on the Teacher Questionnaire as recorded on the Item Tapes and/or deletion of data that was outside the logical minimum and maximum values possible for each variable), they were retained for further analysis since they were meaningful to the interpretation of the analysis itself and would not lead to an indeterminate solution.

The principal axis factor extraction yielded fifteen factors (corresponding to the positive eigenvalues of the intercorrelation matrix of variables with SMC's along the diagonal) which accounted for 42.0 percent of the total variance.

Application of the Scree test (Fig. 1) revealed that eight factors should be retained for rotation. The results of the oblique rotation (Harris-Kaiser Independent Clusters solution) of the eight factors are summarized in Table III. The intercorrelation matrix of factors is included in Table IV.

Table II

Correlation* Among Teacher Variables

Compensatory Education Evaluation 1968-69

	Strata	200	201	202	203	204	205	207	209	210
$\bar{X}$	2.8415	1.9515	1.8666	4.1919	3.2142	2.5653	1.3867	2.5267	1.5423	.6946
S.D.	1.0511	.8026	.3402	1.6449	1.6135	.9403	.4872	1.1004	.4985	.9344
n	1016	1011	1012	1011	1013	1010	1006	1012	1016	1015
Var:										
Strata		0380	-0093	1132	1091	0667	3744	-1597	1604	-1493
200			-3854	0041	-0464	0187	0232	-0570	0461	-0118
201				1608	1638	1245	0104	1032	0006	-0556
202					7239	6706	2035	-0469	0203	-0443
203						6357	1661	-0750	0300	-0444
204							0987	0574	-0534	0060
205								-1473	0739	-0591
207									-0742	0406
209										-7136
210										
211										
216										
217										
218										
219										
220										
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222										
223										
224										
225										
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233										
234										
235										
236										
237										

Table II (con't)

	211	216	217	218	219	220	221	222	223	224
$\bar{X}$	1.5143	.8466	11.3347	1.0988	2.5858	1.0873	1.5725	3.4236	18.1229	1.1406
S.D.	.9141	.3606	16.0058	.4664	2.1170	.3601	1.2036	1.4094	10.8820	.4475
n	978	639	995	749	932	722	772	1001	1001	1010
Var:										
Strata	-1673	0515	-3544	-0679	-4763	-1833	-2452	-2442	-2019	-0798
200	-0807	-0195	-0758	-0830	-0449	-0302	-0016	0687	-1399	-0813
201	-0274	-0060	-0653	-0179	-0003	0034	-0007	-0526	0195	-0006
202	-0723	0164	-1170	0269	-0526	-0177	-0359	-1316	-0599	-0639
203	-0520	-0086	-1022	-0336	-0529	-0201	-0134	-1319	-0592	-0665
204	-0030	-0055	-0880	0181	-0409	-0203	-0150	-0860	-0713	-0946
205	-0624	0132	-1412	0031	-1641	-0320	-1585	-1458	-0750	-0681
207	0442	-0258	1356	0867	1420	-0035	1150	1226	1318	1910
209	-3993	-0322	-1896	-0940	-2134	-1478	-1560	-1428	-1030	-0332
210	4192	0288	2390	0717	1915	1062	1088	1824	1158	0165
211		0593	2527	0938	1987	0667	1843	1690	1681	0372
216			0520	0634	-0686	0437	-0454	0311	0447	-0233
217				1153	4994	-0117	3347	4248	2908	0443
218					0298	1622	1521	0318	2154	0436
219						-0140	1247	3637	1112	0922
220							1893	0001	0458	1608
221								3153	2864	-0103
222									2459	0491
223										0264
224										
225										
226										
227										
228										
233										
234										
235										
236										
237										

Table II (con't)

	225	226	227	228	233	234	235	236	237
$\overline{X}$	1.4891	2.2526	1.5262	1.3025	17.2848	3.5010	1.6294	2.4828	1.2495
S.D.	1.2687	1.5543	1.3885	1.1739	4.1318	.7132	.8495	.8787	.6540
n	869	962	859	810	927	984	931	819	950
Var:									
Strata	-0982	-0305	-1049	-1416	2035	-0489	-0577	-1340	-0193
200	0205	-0246	-0485	-0300	-0425	-0543	0869	-2967	-0526
201	0141	0190	0055	-0005	0154	0422	-0748	0641	-0113
202	-0691	0259	-0538	-0375	1486	-0940	-0317	-1459	0050
203	-0222	0319	-0231	-0123	1753	-0919	-0675	-1020	-0348
204	-0509	0191	-0009	-0006	1040	-0691	-0378	-0872	-0287
205	-0811	-0103	-0850	-0725	1356	-0685	-0812	-1187	-0430
207	0879	0087	0663	0928	-1509	0816	0046	0166	0141
209	-1072	-0885	-0954	-0262	0829	-1160	-1054	-0650	-0509
210	0887	0820	0963	0191	-0769	1243	1313	0560	0606
211	1564	1457	1648	1564	-0782	0321	1149	0955	0617
216	1058	1396	0881	0289	0567	0542	0226	0572	-0044
217	2480	2080	2661	2784	-1053	0852	1152	0662	0372
218	1304	0730	1021	1487	-0602	-0151	1258	0384	0683
219	0916	0464	1182	0669	-2202	1645	1831	0930	1180
220	-0259	-0229	0638	0219	-0518	-0200	1117	1063	0814
221	2265	1445	2169	1822	-0368	-0158	0288	0400	0098
222	2011	2345	1895	1975	-1527	0368	0908	0952	-0035
223	1867	1582	1689	1654	-0801	0339	0392	1285	-0197
224	0229	-0130	0407	0278	-0407	-0365	-0074	0309	0190
225		5897	7307	6536	-0136	0516	0673	0174	0325
226			5477	4118	0525	0714	0372	-0163	0241
227				7007	-0344	0436	0132	-0045	0145
228					-0238	0212	-0155	0109	0201
233						0467	-0363	-0163	-0003
234							0301	0222	0430
235								3442	3917
236									2730
237									

* Leading deicmal points are omitted.

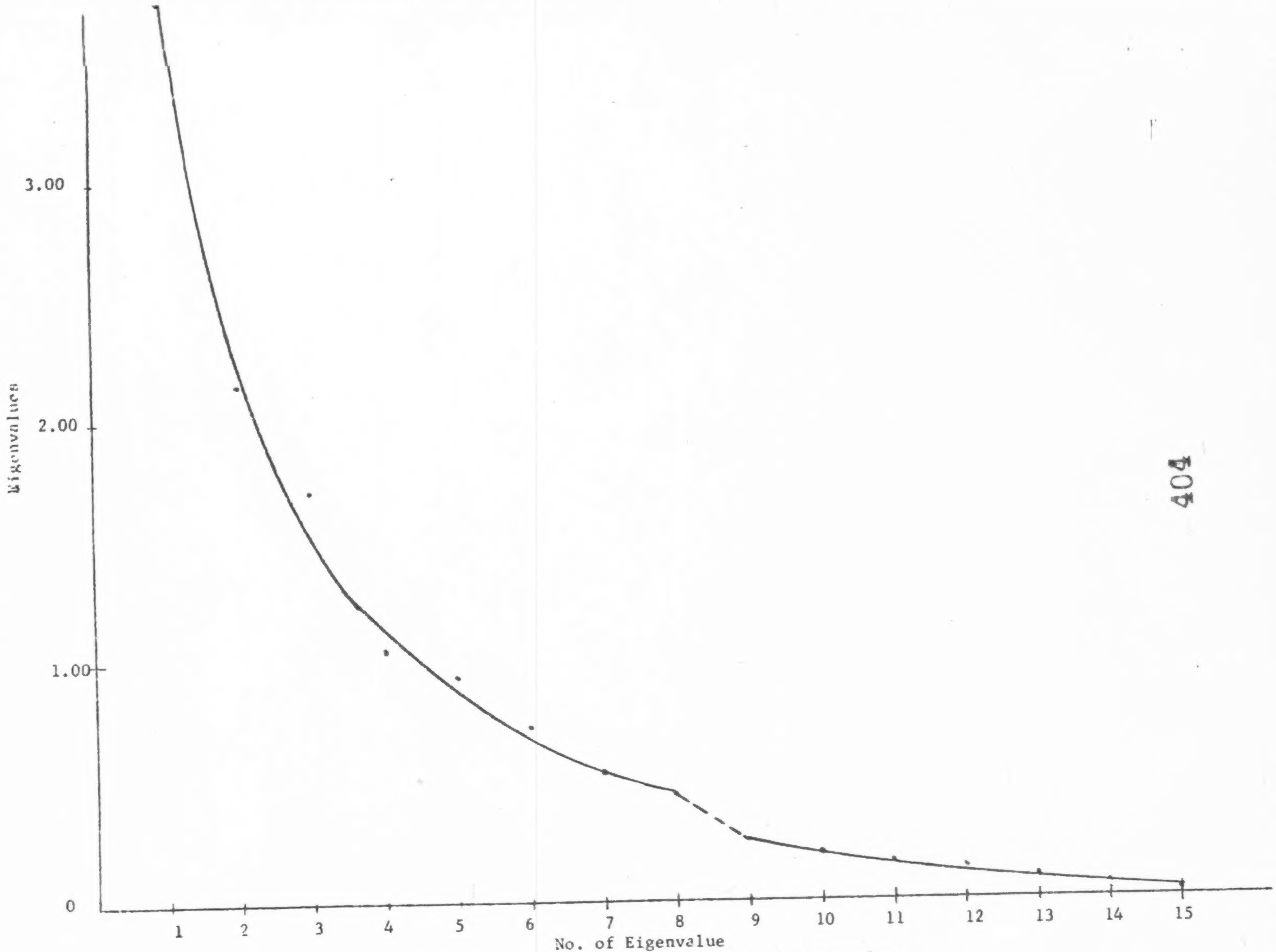

Fig. 1 Graph of Eigenvalues Against Number of Eigenvalues

Table III
Factor Pattern* for Factor Analysis of Teacher Variables
(Harris-Kaiser Independent Clusters Oblique Solution)

Variable	1	2	3	4	5	6	7	8
Strata			5139				-2000	
200						6531		
201		1364				-4891		
202		8412						
203		7991						
204		7756						
205			3896					
207			-3313			-1024		
209				-8079				
210				8092				
211				4266				1460
216			1964					1017
217							4840	3377
218					1054		-2559	3599
219			-2201		1012		6334	-1035
220			-3311	1135	1326		-4443	2173
221								5843
222							3841	3500
223						-1375		5445
224			-3220				-1520	
225	8428							
226	5772		2495				1142	
227	8720							
228	7748							
233			2758				-1079	
234		-1013		1322		-1216	2176	-1801
235					6397	1284		
236		-1052			4777	-2787		
237					5417			-1067
Variance of Factors:	2.4497	2.0377	1.0229	1.5422	1.0015	.8349	1.2023	1.1781

*Only factor pattern coefficients greater than .1000 in absolute value are shown. Leading decimal points are omitted.

Table IV

Correlations* Among Oblique Factors for Teacher Variables

	Factor							
	1	2	3	4	5	6	7	8
1		-0418	-0706	1558	0559	-0492	2841	4784
2			2269	-0411	-1295	-0804	-1657	-1324
3				-2473	-2135	1191	-4963	-4627
4					2279	-0414	3274	3764
5						-1253	1744	2079
6							-0052	-0953
7								5077
8								

* Leading demical points are omitted.

IV. Identification and Interpretation of Factors

Factor 1. Factor 1 is named class participation in programs for the academic disadvantaged in accord with the following four variables which load the highest on it:

V225--Class participation in programs for academic disadvantaged-Mathematics

V226--Class participation in programs for academic disadvantaged-Reading

V227--Class participation in programs for academic disadvantaged-Language

V228--Class participation in programs for academic disadvantaged-Other

Factor 2. The principal loadings on factor 2 are from the following variables:

V202--Teacher's experience

V203--Years in this school

V204--Experience vs. years in present school

The high first-order intercorrelations between these variables indicate that the teachers spend the majority of their years teaching within one school, suggesting a lack of mobility among teachers. Variable 224, identified by the name Stability of teaching does not load on this factor. It appears that this variables measures a different component of stability when compared to variables 202, 203, and 204, namely the rate of teachers absences within a school year. (Inspection of the first order intercorrelation matrix reveals a positive correlation between variable 224 and variable 207-Teacher absenteeism). Thus, factor 2 will be named teacher experience.

Factor 3. The largest loadings on factor 3 are from the following variables:

Strata--District size (population)

V205--Residence

V207--Teacher absenteeism

V220--Percent of class orientel

V224--Stability of teaching

This factor is a measure of district size and urbanism, reflecting the smaller the district, the more likely teachers reside within the attendance neighborhood of the school. The loadings of the three remaining variables on this factor are compatible with this interpretation. Therefore, this factor will be named *urbanism of school*.

Factor 4. The principal badings on factor 4 are from the following variables:

V209--Training for teaching assignment
V210--Extensiveness of training for teaching disadvantaged
V211--Amount of recent training for teaching disadvantaged

This factor measures the extent to which teachers received formally organized training in the teaching of the academically disadvantaged. Although V209 loads in the opposite direction to V210 and V211, this is explained by the scoring procedure used for this variable. Factor 4 is named *training for teaching academically disadvantaged children*.

Factor 5. Factor 5 received its highest loadings from the following variables:

V235--Classroom grouping-Mathematics
V236--Classroom grouping-Reading
V237--Classroom grouping-Language

These variables indicate the procedure by which pupils are grouped for instruction within the classroom. The classroom groupings included total class as one group, two groups, three groups, more than three groups, and individualized instruction. The higher a class scores on these variables, the more individualized the classroom organization. Accordingly, Factor 5 is named *classroom organization.*

Factor 6. Factor 6 is a "doublet" with high loadings from the following two variables:

V200--Grade taught
V201--Teacher's sex

The opposite loadings of these two variables on this factor, coupled with the fact that their first-order intercorrelation is negative indicates that the proportion of female teachers is greater than the proportion of male teachers for the lower grades. Factor 6 is therefore named *teacher sex by grade interaction*.

Factor 7. The principal loadings on Factor 7 are from the following variables:

V217--Proportion of pupils whose families are on welfare
V219--Percent of class Negro

V220--Percent of class Oriental (negative loading)
V222--Percent of class below grade level in reading

Factor 7 appears to be a measure of socio-economic and educational deficit. The significant loading of V219-Percent of class Negro-on this factor together with the relatively high positive intercorrelations between V219 and variables 217 and 222 indicates that socio-economic and educational deficit are more prevalent in areas with a higher concentration of Negros. This factor will be named socio-economic and educational deficit.

Factor 8. The largest loadings on this factor are from the following variables:

V217--Proportion of pupils whose families are on welfare
V218--Percent of class American Indian
V221--Percent of class Spanish-surnamed
V222--Percent of class below grade level in reading
V223--Class stability

This factor measures the proportion of pupils in a class who are either American Indian or Spanish sur-named American including pupils of Cuban, Mexican, Puerto Rican, or Spanish descent. The high loading of V223--"Class stability"-taking into account the scoring of this variable and coupled with the first-order correlations between V223 and variables 218 and 221 is suggestive of a degree of mobility among these minority groups. This factor is named American Indian-Spanish surnamed class composition.

Factors 7 and 8 have a substantial positive correlation, .51. This correlation, coupled with the negative correlations (-.50 and-.46) for factors 3 and 7 and 3 and 8 respectively, indicates that the greater the percentage of minority group pupils in a class the more likely the class is in an urban area in which there is a socio-economic and educational deficit.

Both factor 7 and factor 8 correlate positively (.28 and .48 respectively) with factor 1, indicating that the percent of participation in programs for the academically disadvantaged is more prevalent in those areas characterized by a socio-economic and educational deficit and a large, relatively speaking, minority population.

The correlations of factor 4 with factors 3, 7 and 8 (-.25, .33, and .38 respectively) indicate that teachers in the larger urban schools in which there is a socio-economic and educational deficit and a relatively large minority class composition have participated in a greater number of formally organized programs in the teaching of academically disadvantaged children.

The correlations of factor 5 with factors 7 and 8 (.17 and.21) suggest that instruction is more individualized in those schools characterized by a socio-economic and educational deficit and a relatively large minority composition. This result is rather surprising in light of antecedent expectations.

Factors 2 and 3 correlate .23, suggesting that teachers with more years of teaching experience tend to have more formally organized training in the teaching of academically disadvantaged children. The correlation of factor 4 with factor 5, .23, suggests that teachers who have participated in formal organized training for teaching academically disadvantaged children tend to organize their classes on a more individualized basis.

Technical Report No. 19

I. Purpose

Factor analysis was performed on the pupil output variables, Grade two, to ascertain the underlying dimensions of these variables, thus obtaining a more parsimonious description of the pupil outcome data.

II. Data

(i) Pupils Sampled

From the total of 36,609 Grade two pupils initially sampled for the Compensatory Education Evaluation 1968-69 a stratified random sample of 3510 pupils was obtained. Technical Report No. 6, pp. 1-2, includes the procedure followed for selecting this stratified sample. Table I is a summary of the number of Grade two pupils sampled.

Table I
Summary of Grade Two Pupils Sampled
Compensatory Education Evaluation 1968-69

	Strata				
	1	2	3	4	Total
Initial Sample	21339	9724	4252	1294	36609
Stratified Sample	509	820	1056	1125	3510

(ii) Input Variables

The data from the Pupil Questionnaire were transformed into measures of pupil variables suitable for metric analysis. Technical Report No. 3 provides a summary of the procedures followed, and includes a description and scoring for each variable.

From the total of 191 pupil variables originally formed, 55 (a) variables related to pupil outcomes and for which there was sufficient data were selected for factor analysis. A pupil outcome was defined as a change in pupil academic performance or behavior during the 1968-69 school year. Table II provides a list of the pupil variables analyzed.

(a) Additional variables were originally included, but due to the high incidence of omitted data, the resulting correlation matrices were ill-conditioned. The reason for the high omission rate is attributable to lack of responses on the Pupil Questionnaire as recorded on the item tapes and/or deletion of data that was outside the logical minimum and maximum values possible for each variable.

III. Method

Factor extraction was accomplished by a principal axis procedure. Squared multiple correlations were used as estimates of the communalities. (b)

An oblique transformation was performed using the Harris-Kaiser Independent Clusters solution. The factors to be transformed were selected using the Scree Test. (c)

IV. Results

The intercorrelations among the 55 pupil variables are presented in Table VII, Appendix A. Included in this table are the mean, standard deviation, and total number of cases for each variable.

The principal-axis factor extraction produced 30 factors (corresponding to the positive eigenvalues of the intercorrelation matrix of variables with squared multiple correlation coefficients along the diagonal) which accounted for 50.4 percent of the total variance.

The results of the Scree Test (Fig. 1) revealed that 24 factors, accounting for 50.0 percent of the total variance, should be retained for factor transformation. The results of the oblique transformation (Harris-Kaiser Independent Clusters solution) of the 24 factors are summarized in Table III. The intercorrelation matrix of factors appears as Table IV.

(b) The Biomedical computer programs BMD 03D-Correlation With Item Deletion-and BMD 03M-General Factor Analysis-were used for this computation.

(c) Cattell, Raymond B. Ed. Handbook of Multivariate Experimented Psychology, Chicago:Rand McNally and Company, 1966 p.241.

Table II

Outcome and Related Data for Factor Analysis of Pupil Variables

Variable No.	Name
	Strata
2	Sex
3	Age
4	Months in class
5	Average absences/month
7	Number of schools attended
8	Neglected child
9	Delinquent child
10	Migrant
14	Home language other than English
15	Occupational level of head of household
16	Family on welfare
19	Income/family member
25	Urbanism of home
26	Expectation, attitude
27	Expectation, ability
32	Recommended reading level
33	Critical needs:mathematics
34	Critical needs:reading
35	Critical needs: language
36	Critical needs:culture
37	Critical needs:health
38	Critical needs:psychology
39	Critical needs:special
40	Critical needs food
41	No critical needs
53	No. of hrs. part. in mathematics program for disadvantaged
54	No. of hrs. part. in reading for disadv.
55	No. of hrs. part. in language for disadv.
56	Total no. of hrs. part. in programs for academically disadvantaged
76	Handling property
77	Completing assignments
78	Attentiveness
79	Creativity
80	Relationship with adults
81	Relationship with pupils
82	Disruptive behavior
83	Oral instructions
84	Written instructions
86	Self concept
87	Dress habits
89	Attendance
90	Reading proficiency
91	Mathematics proficiency
92	Oral expression
93	Awareness
94	Aspirations
95	Liking for teachers
96	Independent learning
97	Pupils productive work (academic)
98	Pupils productive work (other)
101	Pupils interest in Mathematics
102	Pupils interest in Reading
103	Pupils interest in Language
133	No. of pupils in household

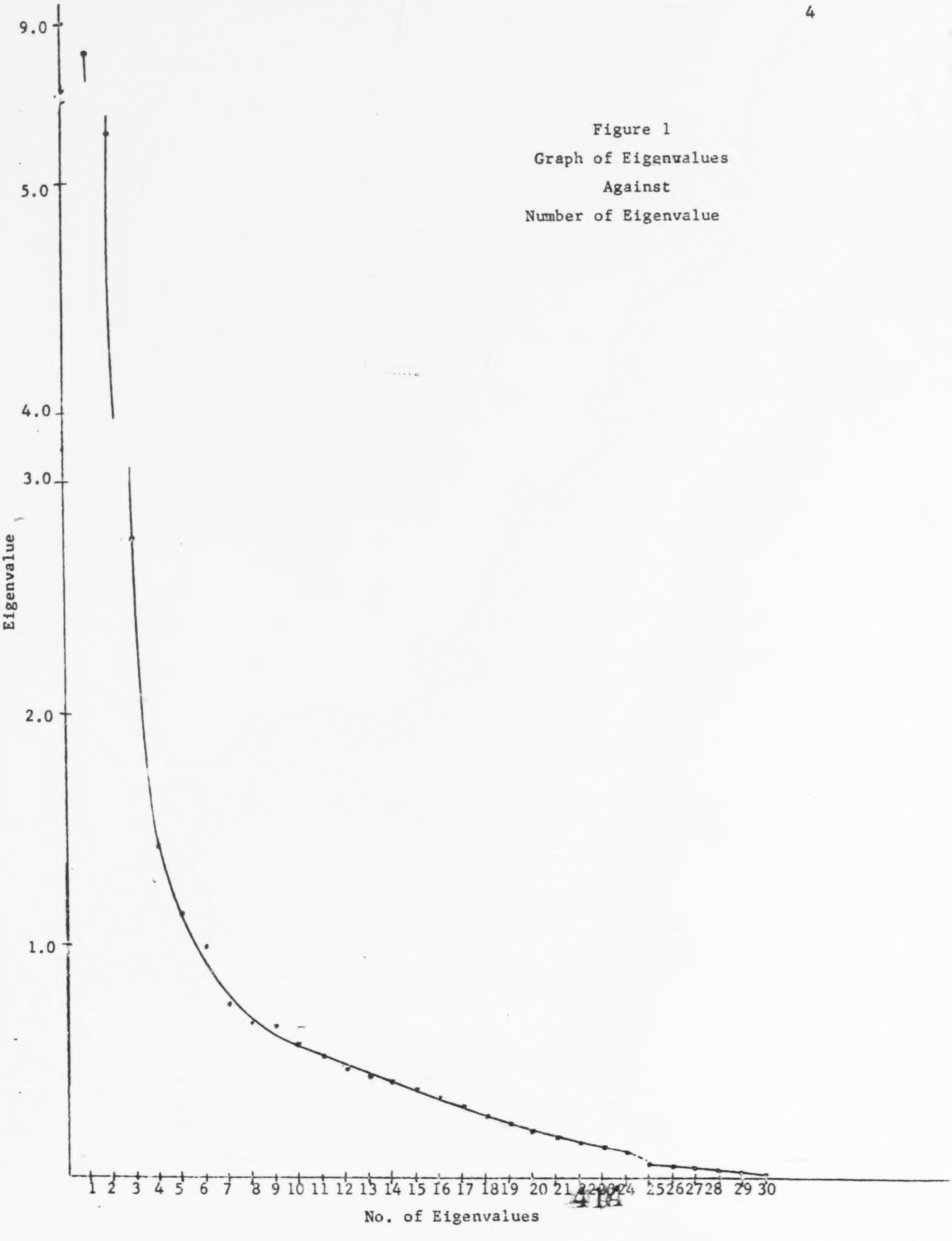

Figure 1
Graph of Eigenvalues
Against
Number of Eigenvalue

Table III

Factor Pattern* for Factor Analysis of Pupil Variables: Grade 2

(Harris-Kaiser Independent Clusters Oblique Solution)

Variable	Factor 1	2	3	4	5	6	7	8	9	10	11	12
Strata												
2							-1766			197		
3		-134										
4					710							
5					-633							
7					-415							
8												468
9												480
10		161										110
14												
15								109				
16							120	282				
19				-685								
25												
26		873										
27		900										
32		122					-693			139		
33							331			328		
34							879					
35							205					
36							-208	125				
37								568				
38							-128					
39		-177								181		
40								620				
41							-327	157				
53			1.053									
54											1.114	
55												
56			266								623	
76	-104					138						
77												
78												
79												
80						833						
81						805						
82						394						
83	853											
84	855											
86	156					184	157		106	123		
87												
89												
90										145		
91										-185		
92												

Table III (con't)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
93									115			
94									947			
95						449			153			
96	111								170	166		
97										152		
98										105		
101							121		278	278		
102							-142		795	795		
103									726	726		
133				846								
Variance of Oblique Factors:	1.543	1.755	1.200	1.204	1.101	1.825	1.754	.897	1.039	1.617	1.644	.498

	Factor											
Variable	13	14	15	16	17	18	19	20	21	22	23	24
Strata				438					122		-127	
2		-319										-302
3					-146	146	-216		-103	220	-118	197
4												
5												-109
7						105			-124	112	-132	178
8												
9												
10				124		-157	-343				-106	
14				104			465					
15									541			
16									-385		-160	
19									236			
25				458								
26												
27												
32											119	
33		-516									145	
34												
35							-147				436	
36											622	
37											153	
38						122					116	391
39						-185						388
40												
41											-458	-173
53												
54												
55		1.050										
56		237										
76								265		385	119	-146
77					101					756		
78										730		

Table III (con't)

Variable	13	14	15	16	17	18	19	20	21	22	23	24
79					-103	589				112		
80												
81												
82										378		
83												
84												
86						210					-149	
87								603				
89								601				
90		-183			776							
91		256			758							
92		-101			278	600						
93						766						
94												
95								156		-152		104
96					238	178		-102				
97	-457	111								106		-152
98	515											-110
101		690										
102												
103		176										
133									137			
Variance of Oblique Factors:	.492	1.063	1.183	.471	1.443	1.551	.434	.899	.635	1.592	1.063	.625

*Only factor pattern coefficients greater than .100 in absolute value are shown. Leading decimal points are omitted.

Table IV

Correlations* Among Oblique Factors for Pupil Variables: Grade 2

Factor	1	2	3	4	5	6	7	8	9	10	11	12
1		304	038	027	146	598	-207	-039	655	442	008	035
2			-086	-337	167	106	-727	-471	364	653	-178	-169
3				110	-007	010	125	098	010	-011	635	022
4					-080	084	301	447	011	-126	100	119
5						082	-145	-167	139	140	-036	-105
6							-041	086	573	266	034	-004
7								378	-267	-645	261	116
8									-083	-184	153	329
9										505	-040	-084
10											-098	-120
11												028
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												

Factor	13	14	15	16	17	18	19	20	21	22	23	24
1	-056	260	029	016	772	729	010	468	011	788	-059	-348
2	-223	605	-125	-023	371	424	439	057	526	182	-528	-688
3	107	-076	653	-074	014	-008	-134	064	-121	023	144	065
4	107	-178	106	112	-027	-085	-329	112	-517	126	381	143
5	-113	103	-051	270	121	136	215	166	222	088	-148	-230
6	038	118	036	-002	486	571	-003	728	-056	740	066	-174
7	197	-659	157	-051	-306	-351	-428	027	-444	-085	736	628
8	145	-301	195	-092	-063	-126	-338	-068	-588	076	620	436
9	-086	327	-007	-008	662	769	-018	550	076	604	-110	-334
10	-197	660	-046	024	467	505	172	216	222	373	-360	-699
11	084	-122	662	-088	008	-036	-134	047	-181	038	226	136
12	185	-151	029	052	-025	-012	-248	-052	-216	056	170	209
13		-222	107	-109	-083	-106	-129	055	-158	-054	214	294
14			-087	082	389	425	215	058	372	222	-558	-561
15				-111	016	-010	-199	052	-206	029	219	126
16					002	-018	-038	-037	201	005	-168	-030
17						783	034	396	054	667	-106	-300
18							095	461	134	611	-218	-343
19								-054	412	-046	-367	-336
20									-049	584	085	-106
21										-040	-536	-329
22											-040	-300
23												560
24												

*Leading decimal points are omitted

V. Identification and Interpretation of Factors

1. Factor 1. The principal loadings on factor 1 are from the following variables:

V83--Oral instructions
V84--Written instructions

This factor is a measure of the change in pupil's understanding of both oral instructions and written instructions during the school year. Consequently, factor 1 is named pupil understanding of instructions.

2. Factor 2. Factor 2, a "doublet", received its highest loadings from the following two variables:

V26--Expectation, attitude
V27--Expectation, ability

Variables 26 and 27 relate to the teacher's opinion as to how far each pupil is likely to go in school, considering respectively the pupil's attitude and ability. Thus factor 2 is named teacher's expectation of pupil progress in school.

3. Factor 3. Factor 3 is named number of hours participation in mathematics programs for the academically disadvantaged in accord with the only variable, Variable 53, possessing a high loading on it.

4. Factor 4. The two principal loadings on factor 4 are determined by the following variables:

V19--Income per family member
V133--Number in pupil's household

Factor 4 appears to be a measure of economic deficit. As expected, the greater the number of people per household, the lower the average income per family member. Variable 15--Occupational level of head of household-- and variable 16--Family on welfare--, two other indices of economic status, loaded on factor 21, which correlates -.52, with factor 4. Taking into account the loading of these latter variables on factor 21, factor 4 will be named economic status. (Factor 21 is named employment status.) The negative correlation between factors 21 and 4 is attributable to the scoring procedure applied to the corresponding variables.

5. Factor 5. This factor has its important loadings from the following variables:

V4--Months in class
V5--Average absences per month
V7--Number of schools attended

As expected, the greater the number of schools attended, the greater the average absences per month, and the fewer the number months in the class in which the pupil was registered on May 1, 1969. This factor is named pupil mobility.

6. Factor 6. Important loadings on factor 6 are from the following variables:

V80--Relationships with adults
V81--Relationships with pupils
V82--Disruptive behavior
V95--Liking for pupils

This factor measures the change in ability of the pupil to get along with others during the school year and is thus named pupil relationships with others.

7. Factor 7. This factor has its principal loadings from the following variables:

V32--Recommended reading level
V33--Critical needs: mathematics
V34--Critical needs: reading
V41--No critical needs

Variable 32 indicates the level of reading material which will be most appropriate for each pupil in the next year. Variables 33, 34, and 41 relate to critical needs for the next year. The method of scoring V32 accounts for the negative loading of this variable. Since the loading of V33 is less than for V34, and since it has an important loading on factor 14, factor 7 will be named critical need: reading.

8. Factor 8. This factor is a "doublet" with high loadings from two variables:

V37--Critical needs: health
V40--Critical needs: food

Variables 37 and 40 refer to the pupil's need for a health program and a food program for the next year. This factor is named critical needs: health and food.

9. Factor 9. Factor 9 is a"singlet" receiving one high loading from V94--"Educational aspirations." This variable relates the degree of change in the educational aspirations of the pupil as perceived by the teacher during 1968-69. This factor will be named pupil's educational aspirations.

10. Factor 10. The highest loadings on this factor are from the following variables:

V33--Critical needs: mathematics

V102-Pupil's interest in reading

V103-Pupil's interest in language

Taking into account the relative loadings of these variables on this factor, this factor is named pupil interest in reading and language arts.

11. Factor 11. The following two variables possess high loadings on this factor.

V54--Number of hours participation in reading programs for the academically disadvantaged.

V56--Total number of hours participation on programs for the academically disadvantaged.

In accord with the variable with the higher loading, and to differentiate this factor from factors 3 and 15, factor 11 will be named number of hours participation in reading programs for the academically disadvantaged.

12. Factor 12. Factor 12 is a "doublet" receiving its highest loadings from the following variables:

V8--Neglected child

V9--Delinquent child

It is not readily apparent from the pupil questionnaire (item 8) what is meant by an "institution for neglected children" and an "institution for delinquent children". Consequently no name has been given this factor.

13. Factor 13. The highest pattern coefficients on this factor are from the following two variables:

V97--Pupil's productive activity (Academic Work)

V98--Pupil's productive activity (Other)

Variable 97 is a measure of the percent of classtime each pupil spends with academic work; variable 98 relates to percent of classtime each pupil spends with "other constructive learning activities". As expected the factor loadings of these two variables are in opposite directions. Because it is not exactly clear what other constructive activities include, and because Variable 82--Disruptive behavior--loads on two other factors (factors 6 and 22), factor 13 will be named *percent class time spent in constructive activities.*

14. *Factor 14.* The principal loadings on factor 14 are from the following variables.

V2--Sex
V33--Critical needs: mathematics
V101-Pupil's interest in mathematics

The loadings of Variables 33 and 101 in opposite directions on this factor suggest that those students who possess no critical need in mathematics possess moderate to high interest in mathematics. Although Variable 2 loads on this factor, the first order correlation of this variable with variables 33 and 101 reveals very little relationship. Factor 14 is named *mathematics needs and interest*.

15. *Factor 15.* A singlet, factor 15 is named *number of hours participation in language arts programs for the academically disadvantaged* in accord with Variable 55.

16. *Factor 16.* This factor is a "doublet" with significant loadings from two variables:

Strata--School District size (population)
V25-----Urbanism of home

These variables load in the same direction which is expected since the lower stratum numbers correspond to the school districts with larger pupil populations and the lower numbers on Variable 25 correspond to primarily residential areas. Consequently this factor will be named *urbanism of home.*

17. *Factor 17.* The principal loadings on this factor are from the following variables:

V90--Reading proficiency
V91--Math proficiency

Variables 90 and 91 relate respectively to the degree of change in reading proficiency and math proficiency during 1968-69. The summary data (Table VII)reveal that the average change was rated between "some change for the better to no change (change not necessary)." Thus, this factor is named pupil proficiency: reading and mathematics.

18. Factor 18. The following variables possess high loadings on factor 18:

V79--Creativity
V92--Oral expression
V93--Awareness

These three variables indicate the degree of change in creativity, oral expression, and awareness. Because each of these variables is dependent upon a degree of verbal fluency, factor 18 will be named verbal fluency.

19. Factor 19. A "doublet", the principal loadings on this factor are from the following two variables:

V10--Migrant
V14--Home language other than English

This factor measures whether a pupil can be classified as from an agricultural migrant family in which a language, other than English, is the primary language of the pupil's home. The loadings of these variables in opposite directions, is accounted for by the scoring procedure used. Factor 19 is named primary home language non-English, in agreement with the higher loading of variable 14.

20. Factor 20. Important loadings on factor 20 come from:

V87--Dress habits
V89--Attendance

This factor is a measure of the change in a pupil's personal appearance and attendance during 1968-69. The summary data reveal that the mean rating as given by the teacher was "no change (change not necessary)." Factor 20 will be named pupil responsibility.

21. Factor 21. The two principal pattern coefficients for this factor come from the following variables:

V15--Occupational level of head of household
V16--Family on welfare

It would appear, given the summary data and the procedure for scoring both variables that those families in which the occupational level of the head of the household is classified as low are more likely to be receiving welfare. Contrasted to factor 4, economic status, factor 21 will be named employment status.

22. Factor 22. The highest loadings on this factor are from the following variables.

V76--Handling property

V77--Completing assignments

V78--Attentiveness

Factor 22 is a measure of change in pupil responsiveness within the classroom. Factor 22 correlates highly with Factor 20 (r=.58), which appears to be a measure of pupil responsibility. It is postulated that for the latter factor, the responsibility is primarily motivated from outside of the classroom; in the former the motivation is derived within the class. For this reason, factor 22 will be named pupil responsiveness within the class.

23. Factor 23. The principal loadings on this factor are from the following three variables:

V35--Critical needs: language.

V36--Critical needs: culture

V41--No critical needs

There appears to be no compelling reason for these particular variables to load on the same factor . In deference to the slightly higher loading of V36, this factor will be named critical needs: culture.

24. Factor 24. The highest loadings on factor 24 are from:

V2---Sex

V38--Critical needs: psychology

V39--Critical needs: special

Variable 2, sex, loads in the opposite direction to V38 and V39; however the first order correlations do not support the interpretation that boys are in greater need of psychological counselling and special services (speech therapy, retarted, handicapped) than girls. Factor 24 is named critical needs: psychological counselling and special education.

A study of the intercorrelations among the factors is revealing. (see Table IV). One particular subset of interest includes those factors related to changes in academic performance or behavior during the school year. Inspection of Table V reveals that the correlations among factors 1, 6, 9, 17, 18, 20 and 22 range between .46 and .79.

Table V

Correlations* Among Oblique Factors Related to Change in Pupil's Academic Performance or Behavior

Factor

Factor	1	6	9	17	18	20	22
1		598	665	772	729	468	788
6			573	486	571	728	740
9				662	769	550	640
17					783	396	667
18						461	611
20							584
22							

*Leading decimal points are omitted

For each of the variables loading on these factors (variables 76-84, 86-87, and 89-86), the teacher was asked to rate the change in academic performance or behavior on a six point scale (see Item, 41 Pupil Questionnaire). The summary data (Table VII) reveal that the average mean rating was between "some change for the better" and "no change (change not required)" for all variables. Coupled with the generally high first-order correlations among the variables, the dependency among factors and the overall mean rating on each variable are suggestive that possibly the teachers formed an overall impression about a pupil's merit which strongly influenced their ratings of the specific behaviors and academic performances asked for. A study needs to be performed to determine whether such a halo effect exists, and if so, to what extent.

Factors 10 and 14, measures of pupil interest in reading, language arts, and mathematics, correlate positively with the factors related to changes in pupil's academic performance and behavior. For example, the correlations between factors 10 and 18 (.66) and between 14 and 18(.43) reveal that pupil's with higher interest in reading, language arts, and mathematics exhibited more change in creativity, oral expression and awareness than pupils uninterested in these subjects. Likewise, pupils withhhigher interests in the academic subjects demonstrated a greater change in educational aspirations and academic proficiency than pupils with lower academic interests (Intercorrelations between factor 9 and factors 10 and 14 are respectively .51 and .33).

Inspection of the correlations among the "critical needs" factors (7, 8, 14, 23 and 24) reported in Table VI coupled with the positive intercorrelations of variables 33-40, suggests that a pupil rated as in need of an academic remedial program beyond regular school programs or in need of specialized services such as, conseling, cultural, health, special education, or food programs was likely to be in need of more than one of these programs.

Table VI

Correlations* Among Critical Needs Factors

Factor	7	8	14	23	24
7		378	-659+	786	628
8			-301	620	436
14				-558	-561
23					560
24					

* Leading decimal points are omitted.

+ The negative correlation of factor 14 with the remaining critical needs factors is attributable to the configuration of factor loadings on factor 14 and does not suggest a negative relationship between the critical need for remedial mathematics and the remaining critical needs.

The significant correlations between the block of critical factors (7, 8, 14, 23, and 24) with some of the remaining factors reveal some interesting relationships. The correlations between factor 2 and each of the "critical needs" factors (-.73, -.47, .61, -.53, -.69) indicate that for pupils possessing critical needs the lower the teacher's expectation of how far that pupil will progress in formal education. The correlations of factors 4 and 21 with the block of "critical factors" suggest those pupils from families of lower economic-employment levels are likely to be in need of remedial academic programs and/or specialized services. The correlation of factor 10 with each of the critical needs factors, together with the interest component of factor 14, implies that pupil's rated as being uninterested in the academic subjects are more likely to be in need of remedial academic programs and/or specialized services.

Factor 2 correlates positively with Factor 10 (.65) and with Factor 14 (.61). The correlation between Factors 10 and 14 is .66. These correlations suggest that pupils rated as having high interest in reading, language arts, and mathematics are more likely to progress further in school than pupils rated low in academic interest. Similarly, the correlations between factor 2 and factors 4 and 21 (-.34 and.53) and factors 4 and 21 (-.52), indicate that pupil's from families of higher economic-employment levels are rated by the teachers as more likely to progress further in formal education than those pupils from lower economic-employment backgrounds.

The high correlations among factors 3, 11 and 15 (.64, .65, .66) indicate a positive relationship among the number of hours participation by a pupil in mathematics, reading, and language arts programs for the academically disadvantaged. The summary data (Table VII) indicate that the mean number of hours participation in reading programs was greater than for mathematics and for language arts.

The correlation between factor 4 and factor 21 is -.52. Taking into consideration the scoring of the corresponding variables, the correlation substantiates the relationship between lower employment status as reflected by the occupational level of the head of the household, lower income per family member, size of family, and receipt of welfare (AFDC).

The factor analysis performed on the Grade 2 pupil data was replicated using data for Grade 6 pupils to determine the congruence between factors across grades. Twenty-nine factors were extracted at the sixth grade level; twenty-four, accounting for 49.4 percent of the total variance were obliquely transformed. The interpretation of the obtained factor pattern revealed, as expected, a high degree of correspondence with the factor pattern obtained for Grade 2. The factor pattern for Grade 6 is included in Table VIII, Appendix A.

Appendix A

Table VII

Correlations* Among Pupil Variables: Grade 2

Compensatory Education Evaluation 1968-69

	Strata	2	3	4	5	7	8	9	10	14
$\bar{X}$	2.7969	1.4700	93.3943	7.1040	.3975	1.3249	1.0139	1.0015	1.0237	1.9341
S.D.	1.0456	.4992	6.6610	.9826	.3070	.6888	.1173	.0387	.1522	.2481
n	3510	3402	3345	3463	3421	3413	3372	3330	3374	3385
Var:										
Strata		-0225	0116	1218	-1380	-0762	-0499	-0074	0313	0948
2			-0746	-0163	0420	-0100	0100	-0154	0214	0145
3				-0295	0787	1590	0335	0450	1130	-1176
4					-5189	-3664	-0213	0035	-0216	0556
5						2524	0656	0265	0336	-0612
7							0655	0391	0522	-0396
8								3098	1263	-0241
9									0898	-0226
10										-1709
14										
15										
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Table (con't)

Var:	Strata	2	3	4	5	7	8	9	10	14
86										
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133										

	15	16	19	25	26	27	32	33	34	35
$\overline{X}$	1.6905	1.0932	1262.4962	1.6830	3.9336	4.1655	1.8812	1.3779	1.4319	1.3561
S.D.	1.6185	.2907	619.3161	.9012	1.2273	1.2097	.7154	.4695	.4954	.4789
n	3363	3510	3198	3483	3477	3481	3484	3570	3510	3510
Var:										
Strata	1527	-1824	1262	2450	0831	0795	1255	-1046	-0991	-1480
2	-0251	0152	0020	0001	1223	1176	1587	-0296	-1587	-1177
3	-1017	1230	-1718	0248	-3239	-3322	-2100	1107	2109	1887
4	0223	-0056	-0211	0906	0306	0259	0474	-0438	-0318	-0469
5	-0785	1220	-1062	-0354	-1788	-1445	-1411	1246	1132	1207
7	-0431	1026	-0689	-0272	-1534	-1242	-0853	0660	0736	0686
8	-0430	1113	-0807	0376	-1302	-1074	-0733	0747	0766	0881
9	-0368	0151	-0220	0319	-0759	-0780	-0482	0398	0452	0371
10	-0553	0791	-1367	0912	-0915	-0817	-0555	0755	0944	1151
14	0519	-0689	1029	0203	1562	1335	1208	-0799	-1205	-1687
15		-2070	2898	-0225	2331	2058	1732	-1573	-1637	-1765
16			-3066	-0135	-2447	-2085	-1598	1624	1737	1772
19				-1587	3822	3471	2528	-2375	-2860	-3111
25					-0925	-0576	-0258	0262	0500	0453
26						8371	5600	-3881	-4960	-4592
27							5722	-4092	-5219	-4534
32								-4338	-6612	-4409
33									4973	4614
34										5346
35										
36										
37										
38										
39										
40										

Table (con't)

Var:	Str15	16	19	25	26	27	32	33	34	35
41										
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133										

	36	37	38	39	40	41	53	54	55	56
$\overline{X}$	1.2410	1.1219	1.0889	1.0724	1.0732	1.3752	27.7789	21.4803	7.4695	36.7288
S.D.	.4278	.3273	.2846	.2591	.2625	.4842	32.8403	61.1541	29.6338	104.3830
n	3510	3510	3510	3510	3510	3510	3510	3510	3510	3510
Var:										
Strata	-1715	-1117	-0734	-0288	-1044	1635	-0894	-0827	-1221	-1112
2	-0019	-0061	-0947	-0974	-0204	1335	-0147	-0497	-0278	-0415
3	0575	1203	0806	1449	1390	-1935	0115	0382	0519	0408
4	-0466	-0251	-0579	-0081	0074	0423	-0065	-0125	-0193	-0149
5	0842	1338	0820	0246	1006	-1281	0135	0594	0594	0558
7	0294	0685	0801	0409	0620	-0754	-0230	-0147	0074	-0138
8	0876	1353	0783	0465	1351	-0781	0219	0161	0221	0226
9	0331	0342	0975	-0105	0827	-0307	-0089	0036	-0096	-0033
10	0331	0342	0975	-0105	0973	-0828	0583	0233	0519	0467
14	-0408	-0457	-0252	-0301	-0558	1239	-0600	-0599	-1077	-0842
15	-1160	-1321	-0692	-0662	-1349	2043	-0410	-0776	-0844	-0829
16	1654	2101	0859	0694	2899	-1897	0714	1139	1304	1262
19	-2291	02665	-0592	-0924	-2907	3209	-1006	-1010	-1145	-1238
25	0063	0449	-0221	0174	0248	-0496	0066	0029	0143	0078
26	-1742	-2996	-2360	-2745	-2647	4581	-0741	-1609	-1119	-1495
27	-1395	-2869	-1794	-3059	-2475	4374	-0741	-1601	-0934	-1436
32	-1260	-2010	-1727	-1911	-1557	5241	-0688	-1820	-1035	-1576

Table (con't)

Var:	36	37	38	39	40	41	53	54	55	56
33	2193	2609	1657	1352	1787	-3974	1220	1640	1312	1717
34	1783	2463	1521	1893	2009	-6329	0810	2171	1154	1855
35	3154	3083	1566	1941	2569	-5296	0853	1780	1495	1736
36		3111	1329	0749	2328	-3445	0470	0622	1079	0818
37			1651	1580	4501	-2510	0352	0678	0999	0791
38				1369	1313	-2152	0375	0665	0802	0735
39					1283	-2051	0242	0561	0486	0543
40						-2020	-747	1156	1350	1295
41							-1137	-1994	-1334	-1904
53								5094	5949	7819
54									5505	9024
55										7936
56										
76										
77										
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133										

	76	77	78	79	80	81	82	83	84	86
$\overline{X}$	3.2445	3.4218	3.3418	3.2419	3.3042	3.2863	3.0669	3.4408	3.4056	3.2885
S.D.	.7523	.9917	.9865	.9597	.8212	.8655	.8571	.9116	.9594	.9176
n	3411	3428	3452	3369	3343	3434	3331	3437	3434	3230

Var:										
Strata	-0500	-0335	0113	-0097	-0352	0235	-0357	-0210	0135	-0328
2	0010	0307	0413	0727	-0044	0046	0337	0196	0632	0425
3	0148	-0426	-0548	-0642	-0276	-0281	0003	-0787	-1198	-0692
4	0527	0147	0548	0264	0253	0308	0207	0649	0525	0304
5	-0544	-0387	-0657	-0801	-0583	-0509	-0203	-0622	-0904	-0577

Table (con't)

Var:	76	77	78	79	80	81	82	83	84	86
7	-0518	-0882	-0752	-0408	-0647	-0415	-0442	-0885	-1032	-0898
8	0047	-0080	0160	-0016	-0177	-0213	0280	0121	-0116	-0457
9	0198	-0163	0106	-0016	-0340	-0492	-0214	0076	-0080	-0309
10	0597	0385	0538	0010	0243	0486	0381	0395	0244	0215
14	0096	0007	0187	0246	0308	0427	0259	-0085	0128	0261
15	-0419	-0172	0117	0142	-0286	-0288	-0075	-0054	0111	0188
16	0329	0038	0219	0035	0226	0248	0211	0285	-0297	-0003
19	-0971	-0364	-0511	0394	-0320	-0208	-0566	-0258	0273	-0057
25	0237	0154	0362	0065	0278	0131	-0007	0098	0357	-0156
26	0203	1593	1573	2457	0673	0943	0757	1452	2692	2004
27	0059	1502	1480	2340	0495	0720	0545	1653	2888	1808
32	0161	0848	1016	2100	0656	0688	0446	1004	2386	1549
33	0340	-0816	-0727	-1520	-0189	-0214	-0460	-0742	-1565	-0862
34	0229	-0546	-0690	-1552	-0079	-0120	-0116	-0760	-2029	-1070
35	0492	-0183	-0454	-1427	0126	-0110	-0128	-0488	-1315	-0804
36	0645	0537	0353	-0089	0507	0389	0556	0249	0005	-0063
37	0325	0312	0308	-0435	0299	0426	0443	0072	-0488	-0503
38	-0925	-0706	-0879	-0631	-0815	-0760	-0479	-0724	-1277	-1237
39	-0153	-0826	-0810	-1136	0005	-0098	-0327	-0989	-1302	-0661
40	0625	0367	0357	-0251	0468	0295	0358	0187	-0402	-0020
42	-0707	0060	0380	1287	-0074	0051	-0293	0192	1275	0818
53	0290	0204	0171	0079	0106	0025	0125	0453	0205	0051
54	0500	0122	0190	-0224	0178	0065	0494	0240	-0319	-0196
55	0554	0178	0206	-0063	0313	0093	0400	0489	0042	-0211
56	0542	0186	0224	-0123	0227	0072	0443	0423	-0108	-0157
76		4173	3985	2503	3071	4036	3953	3453	3087	3372
77			6168	3080	3376	3243	3582	5113	4645	4092
78				3534	3770	3918	4404	5459	4896	4450
79					2996	2749	2298	3733	3905	3968
80						6115	4150	3378	3056	4119
81							4443	3384	3206	3988
82								3615	2953	3263
83									7357	4503
84										4618
86										
87										
89										
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Table (con't)

	87	89	90	91	92	93	94	95	96	97
$\bar{X}$	3.0390	3.0578	3.6665	3.5480	3.4673	3.2280	3.1878	3.3175	3.3900	6.2119
S.D.	.6420	.6863	.9695	.9785	.9247	.9474	.9173	.7203	1.0230	1.1210
n	3434	3391	3418	3405	3426	3189	3061	3364	3395	3323
Var:										
Strata	-0091	-0229	0036	0028	0157	0216	-0217	-0570	0111	0825
2	-0154	-0144	0339	0008	0229	-0307	0425	-0302	0803	1117
3	-0373	-0361	-1126	-0805	-0839	-1059	-1132	-0008	-1254	-1139
4	0262	0363	0253	0202	0393	0391	0443	-0321	0495	0681
5	-0700	-1577	-0679	-0749	-0954	-1079	-0988	0299	-1202	-1053
7	-0643	-0678	-0783	-0613	-0532	-0862	-1035	0097	-0848	-0998
8	-0506	-0465	-0058	0030	-0130	-0438	-0611	0282	-0169	-0782
9	-0270	-0287	-0349	-0378	0060	-0185	-0629	0168	-0478	-0654
10	0150	0642	0011	0000	0014	-0407	0591	1055	0188	-0453
14	0186	0055	0124	0038	-0215	0356	-0045	0005	0151	0123
15	-0064	-0309	0179	0199	0172	0888	0443	-0593	0419	0696
16	0117	-0180	-0121	0050	0009	-0771	-0311	0576	-0359	-0816
19	-0200	-0510	0355	0355	0426	1315	0181	-1071	0539	0850
25	-0221	0212	-0063	-0023	0036	-0082	0033	0133	0308	0265
26	0607	0611	2479	2229	2044	3010	3105	-0478	3257	2992
27	0325	0401	2641	2532	2221	2989	2929	-0341	3331	2584
32	0248	0456	2287	2018	1761	2798	2515	-0265	3124	2344
33	0040	0324	-1215	-2623	-1247	-2250	-1603	0658	-1975	-2171
34	0037	-0063	-2065	-1449	-1339	-2382	-1940	0784	-2392	-2116
35	-0140	0114	-1160	-0845	-0979	-1908	-1463	1160	-1665	-1932
36	0230	0237	0008	0202	0023	-0664	-0041	0707	0023	-0783
37	-0976	-0300	-0282	-0426	-0351	-0930	-0648	0783	-0612	-0964
38	-0413	-0655	-0868	-0796	-0503	-0712	-1169	0256	-1180	-2064
39	-0136	0359	-0736	-0846	-0949	-1196	-0959	0462	-1108	-1346
40	-0240	-0122	-0306	-0189	-0328	-0538	-0478	0690	-0321	-1067
41	-0089	-0309	1144	1453	1054	1892	1319	-1144	1648	2065
53	0365	0386	0227	0059	0007	0016	0047	0263	0126	-0315
54	0151	0081	0026	0107	-0075	-0385	-0529	0348	-0285	-0571
55	0328	0226	0114	0143	0174	-0161	-0096	0554	0146	-0681
56	0298	0233	0120	0122	0008	-0267	-0306	0445	-0085	-0627
76	3264	2759	2580	2349	2612	2119	3289	3130	2710	1170
77	1949	2310	4330	4147	3532	2953	3974	2415	4305	1717
78	2035	2292	4329	3883	3886	3088	4271	2715	4553	2029
79	2087	1883	3273	3527	4191	4256	4066	1701	4412	1236
80	2837	2537	2584	2558	3378	2589	3209	4104	3195	0911
81	2802	2586	2526	2244	2816	2459	3425	3644	3058	0937
82	2385	2345	2527	2167	2251	2066	2733	2942	2789	1218
83	2263	2237	4653	4502	4548	3721	4464	2787	4973	1455
84	2006	1938	5268	4773	4655	4097	4793	2331	5635	2085
86	3039	2487	3742	3463	4146	3869	5038	2955	4458	1803
87		3787	1859	1680	2109	1953	2862	2562	1931	0637
89			1993	1761	1775	1793	2728	2738	2054	0571
90				6147	4860	3774	4418	2042	5420	1542
91					5122	4241	4429	1908	4986	1599
92						5494	4883	2609	5124	1474

Table (con't)

Var:	87	89	90	91	92	93	94	95	96	97
93							5389	1940	4827	1714
94								3115	5808	2241
95									2655	-0375
96										2054
97										
98										
101										
102										
103										
133										

	98	101	102	103	133
$\overline{X}$	3.2491	3.1470	3.2783	3.0115	5.9895
S.D.	1.2491	.7560	.7347	.7443	2.4364
n	3208	3346	3354	3314	3424

Var:					
Strata	-0452	0720	0289	0389	-0422
2	0084	0062	1795	2016	0094
3	-0147	-1297	-2195	-2029	1153
4	-0041	0421	0133	0360	-0109
5	0077	-1206	-1039	-1028	0818
7	-0361	-1173	-1062	-1089	0331
8	0070	-0479	-0890	-0710	0733
9	0779	-0499	-0479	-0438	0105
10	0464	-0276	-0269	-0280	1253
14	0054	0270	0579	0399	-0554
15	-0037	1131	1034	1197	-0690
16	-0035	-0851	-0831	-0840	0980
19	-0234	1353	-1571	-1664	6802
25	-0023	0058	-0056	-0047	0804
26	0262	4479	5165	5238	-1691
27	0131	4450	4984	4894	-1559
32	0583	4482	5501	5179	-1166
33	0083	-4500	-2736	-3201	1081
34	-0196	-3426	-4909	-4376	1502
35	0067	-2855	-3302	-3697	1572
36	0099	-0731	-0746	-0978	1237
37	-0170	-1329	-1524	-1617	1746
38	-0561	-1997	-2068	-2279	0195
39	-0183	-1460	-1578	-1761	0470
40	0019	-0820	-1190	-1317	1953
41	0264	3569	3824	4149	-1422
53	0605	-0102	-0244	-0317	0728
54	0138	-0561	-1122	-0987	0526
55	0322	-0244	-0589	-0319	0612
56	0365	-0429	-0901	-0768	0711
76	0916	0798	1056	0919	0753
77	0938	2193	2181	1826	0449
78	0723	2026	2422	2199	0623
79	0437	2526	2633	2801	0174
80	0708	1116	1107	1224	0251
81	0785	1160	1238	1368	0164

Table (con't)

Var:	98	101	102	103	133
82	0770	1244	1165	1146	0656
83	0697	2013	2276	2015	0371
84	0678	2748	3339	2953	-0153
86	0723	2246	2534	2652	20306
87	0517	0829	0923	0901	0148
89	0354	0748	0909	0904	0419
90	0443	2195	3504	2511	-0076
91	0466	3689	2335	2452	-0030
92	0164	2247	2467	2462	-0169
93	0397	3022	2860	3115	-0650
94	0643	3087	3523	3463	-0128
95	0484	0000	0081	0053	0605
96	0871	3427	4032	3608	-0366
97	-2565	3176	3247	3564	-0227
98		1025	0828	1026	0346
101			5601	6225	-0395
102				7025	-0816
103					-0764
133					

*Leading decimal points are omitted

Table VIII

Factor Pattern* for Factor Analysis of Pupil Variables: Grade 6

(Harris-Kaiser Independent Clusters Oblique Solution)

	Factor											
Variable	1	2	3	4	5	6	7	8	9	10	11	12
Strata												
2									-108			
3									-358			
4				-630								
5												
7		-145										
8												
9												
100												
14												
15												
16												
19				-663								
25												
26									846			
27									9949			
32		-735										
33		494										
34		9905										
35		6601										
36								142				
37								559				
38												
39									-305			
40								543				
41		-283	1.077					139				
53												
54												1.093
55												
56			313									485
76						208						
77						-120						
78												
79		-285				192						
80						854						
81						816						
82		-175				429						
83										839		
84										841		
86		195				194			142			
87												
89												
90												

Table VIII (con't)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
Strata 91												
92	364	105				130						
93	774											
94	785	785										
95	410					423			-193			
96	743											
97							174				-451	
98							123				516	
101		133					900					
102		-165					696					
103							674					
133												
Variance of Oblique Factors:	2.293	2.258	1.284	1.159	.889	1.980	.724	1.970	1.449		.487	1.464

	Factor											
Variable	13	14	15	16	17	18	19	20	21	22	23	24
Strata							176					
2		389	469									
3			222							244	113	
4					-106							
5					-127							
7										128		128
8	501											
9	479											
10	112	148							-297			
14		123							303			
15							493					
16							-491					
19							259					
25		1465										
26												
27												
32											190	
33			-265			-125					1171	127
34												
35											240	
36											641	
37												
38												484
39	129								118			
40												
41											-554	
53												
54												
55				1.075								
56				.306								

Table III (con't)

Variable	13	14	15	16	17	18	19	20	21	22	23	24
76					267			379				
77								790				
78								749				
79			-118							155		140
80												
81												
82								385				
83												
84												
86					106					254	-117	
87					620							
89					653							
90			-105			727						
91			103			783						
92						424		-122				
93												
94								125				
95										-240		
96												
97												
98												
101												
102			-159									
103			-181				142					
133												
Variance of Oblique Factors:	.532	.436	.518	1.277	.989	1.429	.656	1.580	.249	.258	.949	.399

*Only factor pattern coefficients greater than .100 in absolute value are shown. Leading decimal points are omitted.